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Supreme Court, U.S.
FILED

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No. ____

In The
Supreme Court of the United States

HAYES LEMMERZ INTERNATIONAL, INC.,
MCKECHNIE VEHICLE COMPONENTS U.S.A., INC.,
D/B/A THOMPSON INTERNATIONAL,
Petitioners,

v.

LACKS INDUSTRIES, INC.,
Respondent.

On Petition for Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

PETITION FOR WRIT OF CERTIORARI

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March 18, 2009

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QUESTION PRESENTED

Has the United States Court of Appeals for the Federal Circuit misinterpreted *Pfaff v. Wells Elec., Inc.*, 525 U.S. 55 (1998), and thereby misconstrued the phrase "on sale" in 35 U.S.C. § 102(b), by defining "on sale" to require that an invention be the subject of a commercial offer for sale that the other party could make into a binding contract by simple acceptance (assuming consideration)?

PARTIES TO THE PROCEEDING AND RULE 29.6 STATEMENT

There are no parties to the proceeding other than those listed on the caption.

Pursuant to Supreme Court Rule 29.6, Petitioners make the following disclosures:

Petitioner Hayes Lemmerz International, Inc., f/k/a Hayes Wheels International, Inc., states that it has no parent company.

Petitioner McKechnie Vehicle Components USA, Inc. states that its parent company is DLO Investments, Inc.

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IN THE
SUPREME COURT OF THE UNITED STATES
PETITION FOR WRIT OF CERTIORARI

Petitioner respectfully prays that a writ of certiorari issue to review the judgment below.

OPINIONS BELOW

The District Court has entered judgment for Petitioners Hayes Lemmerz International, Inc. and McKechnie Vehicle Components U.S.A., Inc. ("Petitioners") twice in this case, both times based upon rulings by a Special Master appointed by the court pursuant to the stipulation of the parties. The United States Court of Appeals for the Federal Circuit has reversed and remanded twice, and the case is currently before the District Court again on the second remand. The relevant opinions are listed below.

The 2008 opinion of the United States Court of Appeals for the Federal Circuit is unreported, but is unofficially reported at 300 Fed.Appx. 904, 2008 WL 4962687. (App. 1a-12a.)

The 2007 order of the United States District Court for the Eastern District of Michigan adopting the 2007 Special Master's Report and Recommendation is unreported. (App. 13a-17a.)

The 2007 Special Master's Report and Recommendation is unreported. (App. 18a-120a.)

The 2003 opinion of the United States Court of Appeals for the Federal Circuit is reported at *Lacks Indus., Inc. v. McKechnie Vehicle Components USA,*

Inc., et al., 322 F.3d 1335 (Fed. Cir. 2003). (App. 121a-167a.)

The 2001 Judgment of the United States District Court adopting the 2001 Special Master's Amended Findings of Fact and Conclusions of Law and entering judgment on the same is unreported. (App. 168a-170a.)

The 2001 Special Master's Amended Findings of Fact and Conclusions of Law is unreported. (App. 171a-273a.)

JURISDICTION

The judgment of the United States Court of Appeals for the Federal Circuit was entered on November 26, 2008. Defendants' petition for rehearing was denied on December 18, 2008. (App. 274a-275a.) This Court has jurisdiction under 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS INVOLVED

This case involves the following provision of the United States Code:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States . . .

35 U.S.C. § 102(b).

STATEMENT OF THE CASE

A. Introduction

The Court should grant *certiorari* in this case because the Court of Appeals for the Federal Circuit has misinterpreted the federal statute that precludes an inventor from obtaining a patent claiming an invention that was on sale more than one year prior to the date of application. *See* 35 U.S.C. § 102(b). In *Group One, Ltd. v. Hallmark Cards, Inc.*, 254 F.3d 1041 (Fed. Cir. 2001), the Federal Circuit abandoned its own precedent and decades of law developed in other courts based upon a clear misreading of this Court's decision in *Pfaff v. Wells Elec., Inc.*, 525 U.S. 55 (1998). Under the new test set forth in *Group One*, an invention is deemed to be "on sale" under Section 102(b) only if it is the subject of a commercial offer for sale that the other party could make into a binding contract by simple acceptance. The Federal Circuit's change to the on-sale bar analysis upsets the balance of interests struck by Congress in spurring invention on the one hand and preventing inventors from enlarging their government-granted monopoly period on the other.

The absurd result in this case shows that the Federal Circuit's new standard allows inventors to commercially market their inventions for years prior to filing a patent application without triggering the on-sale bar. The facts found by the Special Master after the 2000 trial that remain unchallenged showed that *for two years before the critical date*, Respondent Lacks Industries, Inc., the patent owner, conducted a thorough and widespread commercial marketing campaign promoting its ready-for-patenting invention.

The campaign included, among other things, dozens of sales calls to automobile manufacturers and automotive wheel manufacturers during which Lacks sought purchasers for its later-patented invention. Lacks' marketing efforts before the critical date also included multi-day technology shows in which the invention was marketed to automobile manufacturers, and numerous meetings with wheel manufacturers in which Lacks marketed the invention.

The Special Master and the District Court found that under the controlling on-sale bar jurisprudence, Lacks' pre-critical date commercial activities clearly triggered the on-sale bar. Between the District Court's entry of judgment and oral argument on Lacks' appeal, the Federal Circuit issued its opinion in *Group One*. Because the Federal Circuit dramatically changed the on-sale bar analysis in *Group One*, thirteen (13) years after this case was filed, the parties are still litigating what constitutes a binding offer for sale in the automotive industry.

B. Proceedings Leading up to the 2000 Bench Trial

The patent at issue in this case relates to decorative overlays or claddings that are affixed to the outwardly facing surface of automotive wheels. (App. 175a.) The resulting composite wheels are aesthetically attractive, but less expensive than the chrome-plated wheels for which they are a substitute. (App. 175.) The claims of the patent at issue relate to a method for securing the claddings to wheels with adhesive. (App. 175a-76a.)

Plaintiff Lacks Industries, Inc. ("Lacks") filed this patent infringement action in the Eastern District of Michigan in February, 1996 alleging infringement of three patents. Only claims 11-13, 20-22, 24, and 25 of U.S. Patent No. 5,597,213 (the "'213 Patent") survived summary judgment and remain at issue (the "Remaining Claims"). As part of its summary judgment decision, the District Court ruled that the invention of the Remaining Claims was ready-for-patenting in May 1992. *Lacks Indus., Inc. v. McKechnie Vehicle Components USA, Inc.*, 55 F. Supp. 2d 702, 734 (E.D. Mich. 1999).

On February 15, 2000, the parties stipulated to the appointment of a Special Master. (App. 278a.) The stipulation and order of appointment directed the Special Master to make all factual findings and legal conclusions necessary to determine whether Petitioners' accused products infringed the Remaining Claims. (App. 278.) The Special Master was also directed to make all factual findings and legal conclusions necessary to determine whether the Remaining Claims were invalid under 35 U.S.C. § 102(b) as a result of Lacks' efforts to commercialize the invention prior to the June 6, 1994 critical date.[1] The parties also stipulated that the Special Master's findings of fact would be final and that the District Court would review only his conclusions of law. (App. 279a.)

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[1] The application that matured into the '213 Patent was filed on June 6, 1995.

C. The Special Master's Post-Trial Amended Findings of Fact and Conclusions of Law

After a one-week bench trial, the Special Master issued Amended Findings of Fact and Conclusions of Law. The Special Master found that Petitioners' accused products infringed the Remaining Claims of the '213 Patent.[2] (App. 272a.) The Special Master also concluded, however, that the Remaining Claims were invalid because Lacks had the claimed invention on sale for more than a year before the patent application was filed. (App. 273a.) The Special Master made several factual findings underlying his invalidity ruling that Lacks never challenged. Regarding Lacks' pre-critical date sales efforts, the Special Master found as follows:

> The record abundantly establishes a thorough and extensive campaign by Lacks to exploit competitively, to use for profit and to commercialize the ready-for-patenting method, commencing two years before the June 6, 1994 critical date. After the May, 1992 ready-for-patenting date, Lacks made pre-critical date commercialization efforts with both wheel manufacturers and OEMs.[3] Lacks widely promoted the use of a specific composite wheel assembly technique, namely, the assembly technique of its later-granted method claims, to make wheels for *any and all* future vehicle

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[2] Prior to trial, Lacks conceded that Defendants' products did not infringe claims 21-22.

[3] "OEMs" is an abbreviation for original equipment manufacturers of automobiles.

> models. Its sales and solicitations took the form of demonstrations of physical samples of prototypes made in accordance with the asserted method claims, and repeated sales contacts with the same potential customers to highlight the advantages of the resulting products.

(App. 259a-60a.)

Regarding the correlation between the invention of the Remaining Claims and Lacks' commercial activities, the Special Master found as follows:

> Lacks' own contemporaneous documentation and trial testimony, summarized above, abundantly establish that (1) the assembly method that Lacks was offering to perform corresponded precisely with the invention of the Remaining Claims, and (2) the overlays and composite wheels that it was offering to sell in conjunction with a wheel-manufacturing partner were to be made by the claimed method.

(App. 260a.)

The Special Master analyzed the facts under the then prevailing Federal Circuit law articulated in *RCA Corp. v. Data Gen. Corp.*, 887 F.2d 1056 (Fed. Cir. 1989) and concluded that the Remaining Claims were invalid under 35 U.S.C. § 102(b). (App. 273.) Under *RCA Corp.*, for commercial activity to trigger the on-sale bar, it had to be more than "merely indefinite or nebulous discussion about a possible sale." *RCA Corp.*, 887 F.2d at 1062. The commercial activity, however, need not rise to the level of a "formal commercial 'offer'

under contract law principles." *Id.* Because Lacks' pre-critical date commercial activity satisfied this requirement by clear and convincing evidence, the Special Master ruled that the Remaining Claims were invalid under Section 102(b).

On April 23, 2001, the District Court adopted the Special Master's Findings of Fact and Conclusions of Law and entered judgment in favor of Petitioners and against Lacks. (App. 168a-70a.)

D. The First Appeal

After the District Court entered judgment, but before argument on the appeal, the Federal Circuit changed the on-sale bar analysis. In *Group One, Ltd. v. Hallmark Cards, Inc.*, 254 F.3d 1041 (Fed. Cir. 2001), based on a misinterpretation of this Court's decision in *Pfaff*, the Federal Circuit abandoned the *RCA Corp.* standard and held that an invention is on sale under Section 102(b) only if it is the subject of a commercial offer for sale "which the other party could make into a binding contract by simple acceptance (assuming consideration)." *Id.* at 1048. The Federal Circuit rejected Petitioners' argument that Lacks' commercial activities in the record amounted to contractual offers for sale based upon automotive industry practice, holding that the record was insufficient to make such a ruling as a matter of law. (App. 144a.) Consequently, the Federal Circuit vacated the on-sale determination by the Special Master because he had applied the outdated *RCA Corp.* standard. (App. 144a-45a.) The court remanded for consideration under the new standard and instructed that "[o]n remand, the district court (or the Special Master) may need to take additional evidence on the

practice in the industry to determine if the activities by Lacks rise to an offer for sale under the UCC." (App. 145a.) Lacks did not appeal, and the Federal Circuit did not address, the Special Master's findings of fact regarding Lacks' pre-critical date activities.

E. On Remand

On remand, the Special Master determined that additional evidence regarding sales practices in the automotive industry was needed. The parties conducted extensive discovery regarding sales practices in the industry. (App. 48a-49a.) Two aspects of this evidence are relevant to this petition. First, the uncontested evidence showed that the complex process for incorporating new products into automobiles requires collaboration between the supplier providing the new product and the OEM. This product development time period is often 36 to 42 months. (App. 54a-55a, 67a-68a.) It is important to note that this product development period occurs *after* the supplier has marketed its new product to OEMs and succeeded in convincing one or more OEMs to incorporate the new product into its vehicles. (App. 56a-57a, 68a.)

Second, the uncontested evidence demonstrated that the first document containing formal contract "offer" language is produced shortly before production of a new vehicle model incorporating the new product begins. (App. 59a, 62a, 65a, 68a.) When the OEM is about to begin production, the *OEM* issues a purchase order to the supplier stating that the purchase order is an *offer to buy* the new part. (*Id.*) Thus, because of the OEMs contracting procedures, by the time the first formal contractual document is issued, the supplier

has commercially marketed its new product, succeeded in securing an OEM's (unwritten) commitment to purchase and use the new product in its vehicles, worked collaboratively for between 36 and 42 months with the OEM to develop the product so that it passes the OEM's safety and durability requirements, and refined the product so that the vehicle can accommodate inclusion of the new part. (App. 52a-69a.)

On August 17, 2007, the Special Master issued his Report and Recommendation in which he concluded that the undisputed evidence demonstrated that Lacks had made five commercial offers for sale that satisfied the *Group One* standard. (App. 112a-13a.) In a separate section titled "Additional Considerations," the Special Master articulated his belief that the Federal Circuit in *Group One* had misinterpreted *Pfaff* and discussed the shortcomings of the *Group One* test. (App. 113a-20a.)

On November 11, 2007, the District Court adopted the Special Master's Report and Recommendation. (App. 13a-15a.) The District Court specifically endorsed the Special Master's Additional Considerations. (App. 15a.)

F. The Second Appeal

On November 26, 2008, the Federal Circuit reversed in part and affirmed in part. (App. 1a-12a.) The Federal Circuit affirmed the District Court's denial of Lacks' motion for summary judgment. The court, however, reversed the District Court's grant of summary judgment of invalidity, holding that there were genuine issues of material fact precluding

summary judgment. The Federal Circuit remanded for the District Court to determine whether Defendants could establish by clear and convincing evidence: (1) if any of the five offers at issue rose to the level of a commercial offer for sale under the *Group One* standard; (2) if so, was the offer communicated to the offeree; and (3) did the product or process offered satisfy each element of the Remaining Claims. (App. 12a.)

On December 18, 2009, the Federal Circuit denied Defendants' petition for rehearing. (App. 274a-75a.)

REASONS FOR GRANTING THE WRIT

The Court should grant the petition because the United States Court of Appeals for the Federal Circuit decided an important issue of federal law that has not been, but should be, settled by this Court. The *Group One* test is not supported by the statutory language and conflicts with this Court's repeated statements that *any* attempts by inventors to commercialize their inventions prior to the critical date will trigger the on-sale bar. *Group One* is based upon an obvious misinterpretation of this Court's ruling in *Pfaff*. It is also plainly inconsistent with the primary policy goal of the on-sale bar – preventing inventors from extending their government-granted monopolies beyond the statutory term. The absurd result in this case is a concrete example of *Group One's* destructive effect on the policies underlying Section 102(b). By extending patent protection to inventions already in the public domain, or allowing inventors to increase the length of their monopolies by delaying the filing of a patent application, the *Group One* test results in unwarranted monopolies that stifle competition.

Finally, as a practical matter, the *Group One* test leaves inventors and the courts with less, rather than more, clarity and certainty in the on-sale bar analysis.

Because the Federal Circuit has adopted an erroneous construction of the on-sale bar that will continue to have adverse consequences on the economic engines of competition and innovation, the petition raises an important national issue that should be resolved by this Court.

A. The *Group One* Test is Not Supported By the Language of Section102(b)

The Court should grant the petition because the Federal Circuit's test for whether an invention is on sale under 35 U.S.C. § 102(b) is not supported by the language of the statute. Section 102(b) provides that:

> A person shall be entitled to a patent unless . . .
>
> the invention was . . . *on sale* in this country, more than one year prior to the date of the application for patent in the United States.

35 U.S.C. § 102(b) (emphasis added). From the short phrase "on sale," the Federal Circuit has generated its binding contractual offer for sale test:

> Only an offer which rises to the level of a commercial offer for sale, one which the other party could make into a binding contract by simple acceptance (assuming consideration) constitutes an offer for sale under § 102(b).

Group One, 254 F.3d at 1048.

The Federal Circuit's extrapolation violates the basic rule that statutory construction begins "with the language employed by Congress and the assumption that the ordinary meaning of that language accurately expresses the legislative purpose." *Engine Manuf. Assoc. v. South Coast Air Quality Management Dist.*, 541 U.S. 246, 252 (2004) *quoting Park 'N Fly, Inc. v. Dollar Park & Fly, Inc.*, 469 U.S. 189, 194 (1985). Nothing in the language of Section 102(b) suggests that Congress intended that the phrase "on sale" be construed so narrowly or that it be given a formalistic gloss. The Federal Circuit's interpretation bears little resemblance to the ordinary meaning of the phrase "on sale." The plain meaning of the phrase "on sale" is "available for purchase." For example, Webster's Dictionary defines "sale" as "opportunity of selling or being sold." Webster's Ninth New College Dictionary, p. 1037 (1988). *See also* The Random House Dictionary of the English Language, Unabridged Edition, p. 1262 (1967) ("opportunity to sell").

This ordinary use of the phrase "on sale" is consistent with the Federal Circuit's own precedent, which it abandoned in *Group One*. *See Linear Tech. Corp. v. Micrel, Inc.*, 275 F.3d. 1040, 1048 (Fed. Cir. 2002) (noting that in *Group One*, the court had "expressly held that our previous enunciation of the law in *RCA Corp.* is incorrect in light of *Pfaff*.") In *RCA Corp.*, the Federal Circuit recognized that an invention could be on sale under Section 102(b) even if the inventor's commercial activities fell short of a binding commercial offer for sale. *RCA Corp.*, 887 F.2d

at 1062.[4] The Federal Circuit's renunciation of this principle detached the on-sale bar analysis from the statutory framework. The Court should grant the petition so that it can settle this important issue of federal law.

B. The *Group One* Test Is Based Upon a Misinterpretation of this Court's Opinion in *Pfaff* and Conflicts with the Policies Underlying the On-Sale Bar

1. The Federal Circuit Misinterpreted *Pfaff*

The Federal Circuit based its departure from the statutory language and from its own precedent upon a misreading of this Court's opinion in *Pfaff*, 525 U.S. 55. In *Pfaff*, the Court addressed "whether the commercial marketing of a newly invented product may mark the beginning of the 1-year period [under Section 102(b)] even though the invention has not yet been reduced to practice." *Id.* at 57. The Court held that an invention need not be reduced to practice in order to trigger the on-sale bar. Rather, the one-year grace period under Section 102(b) begins "when an invention that is ready for patenting is *first marketed commercially*." *Id.* at 67 (emphasis added). The ready-for-patenting prong, which was the focus of the opinion and the issue on which the Court granted *certiorari*, could be established either by showing that the invention had either been reduced to practice or by proof that the inventor had "prepared drawings or

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[4] *See also Gould Inc. v. United States*, 579 F.2d 571, 580 (Ct. Cl. 1978); *Metalizing Eng'g Co., Inc. v. Kenyon Bearing & Auto Parts Co.*, 153 F.2d 516, 518 (2nd Cir. 1946).

other descriptions sufficiently specific to enable one skilled in the art to practice the invention." *Id.* at 67-68. Thus, the Court concluded that the on-sale bar applies when two conditions are satisfied. "First, the product must be the subject of a commercial offer for sale." *Id.* at 67. "Second, the invention must be ready for patenting." *Id.*

Even though the Court had given no indication that it attached new or special meaning to it, the Federal Circuit seized upon the phrase "commercial offer for sale," and surmised that *Pfaff* "strongly suggests that the offer must meet the level of an offer for sale in the contract sense, one that would be understood as such in the commercial community." *Group One*, 254 F.3d at 1046. Consequently, the Federal Circuit ruled that the first prong of *Pfaff* would be satisfied only if the invention was the subject of a commercial offer for sale that the other party could make into a binding contract by simple acceptance. *Id.* at 1048.

The phrase on which the Federal Circuit relied, the paragraph from which it was excised, and the entirety of the *Pfaff* opinion, all make clear that the Federal Circuit misinterpreted *Pfaff*, reading into it worlds of meaning not intended by this Court. The full paragraph from *Pfaff* reads as follows:

> We conclude, therefore, that the on-sale bar applies when two conditions are satisfied before the critical date. First, the product must be the subject of a commercial offer for sale. An inventor can both understand and control the timing of the *first commercial marketing* of his invention. The experimental use doctrine, for example, has not generated concerns about

> indefiniteness, and we perceive no reason why unmanageable uncertainty should attend a rule that measures the application of the on-sale bar of § 102(b) against the date when an invention that is ready for patenting is *first marketed commercially*. In this case, the acceptance of the purchase order prior to April 8, 1981, makes it clear that such an offer had been made, and there is no question that the sale was *commercial rather than experimental in character*.

Pfaff, 525 U.S. at 67 (emphasis added).

The phrase "commercial offer for sale," without more, does not suggest that only a legally binding offer for sale under contract law will trigger the on-sale bar. Rather, it requires only that the product be available for sale. The Court's elaboration of the point in the remainder of the paragraph vividly illustrates the Federal Circuit's mistake. The Court twice equates "commercial offer for sale" with "*first commercial marketing*." It also states repeatedly in other parts of the opinion that *any* pre-critical date efforts by inventors to exploit their inventions for profit will trigger the on-sale bar. Consequently, the Court's use of the phrase "commercial offer for sale" does not imply that it intended to create a new, narrow, and formalistic test under *contract* law for whether something was "on sale" for the purposes of *patent* law.

As the Special Master noted in his Additional Considerations, which the District Court explicitly adopted, the phrase "commercial offer for sale" comes after a discussion of the experimental use doctrine. Under this exception to Section 102(b), transactions or

uses involving an invention that are in furtherance of a *bona fide* effort to perfect the invention do not trigger the on-sale bar. (App. 117a.) Thus, the Court's use of this phrase was merely to maintain the distinction between activities that are primarily for experimental purposes and activities that are for commercial purposes. (App. 116a-17a.) Nothing in *Pfaff* supports, let alone commands, the Federal Circuit's legally binding commercial offer for sale test set forth in *Group One*.

2. The *Group One* Test Undermines the Primary Policy Consideration Behind the On-Sale Bar of Preventing Inventors from Extending the Statutory Patent Term

The Court should grant the petition because the *Group One* test is inconsistent with the policy considerations underlying the on-sale bar as articulated in *Pfaff* and other cases reaching back more than 100 years. The Court notes in *Pfaff* that the purpose of Section 102(b) is to both exclude from patenting things that are already in the public domain and to confine the duration of the patentee's government-granted monopoly to the statutory term. *Id.* at 64. The patent system represents "a carefully crafted bargain that encourages both creation and the public disclosure of new and useful advances in technology, in return for *an exclusive monopoly for a limited period of time*." *Pfaff*, 525 U.S. at 63 (emphasis added). Quoting a case decided in 1877, the Court reiterated that *any* attempt by an inventor to commercialize his invention prior to the critical date will invalidate the patent. *Id.* at 65 (*quoting Elizabeth v. American Nicholson Pavement Co.*, 97 U.S. 126, 137 (1877)):

> It is sometimes said that an inventor acquires an undue advantage over the public by delaying to take out a patent, inasmuch as he thereby preserves the monopoly to himself for a longer period than is allowed by the policy of the law; but this cannot be said with justice when the delay is occasioned by a *bona fide* effort to bring his invention to perfection, or to ascertain whether it will answer the purpose intended. His monopoly only continues for the allotted period, in any event; and it is the interest of the public, as well as himself, that the invention should be perfect and properly tested, before a patent is granted for it. *Any attempt to use it for profit, and not by way of experiment, for a longer period than two years before the application, would deprive the inventor of his right to a patent.*

Id. at 64-65 (*quoting Elizabeth*, 97 U.S. at 137 (1877)) (emphasis added).

The Federal Circuit has drawn an artificial line between (a) commercial marketing, advertising, and other pre-contracting promotional activity that is clearly intended to exploit inventions for profit and (b) offers for sale that are definite enough to allow the offeree to form a contract by mere acceptance. This unwarranted distinction flies in the face of this Court's reiteration in *Pfaff* of the principle that *any* attempt to use an invention (that is ready for patenting) for profit triggers the on-sale bar. *Id.*

This Court's intervention is necessary because the *Group One* court's misinterpretation of Section 102(b) allows inventors to commercially market their

products for years without triggering the on-sale bar, thereby extending the statutory monopoly term. Even under the most innocent circumstances, the *Group One* test delays commencement of the one-year grace period until the point where an inventor enters into formal contract negotiations with a particular customer. This removes from the one-year grace period the time an inventor may spend promoting his ready-for-patenting invention to potential customers, touting the invention's advantages, and bringing potential customers to the point where at least one of them is ready to negotiate a purchase. This phase of promotional activity is no less an attempt by an inventor to exploit his invention for profit than the following phase in which a contract is negotiated and concluded. Thus, under the *Group One* test, an inventor is free to commercially market his invention for as long as it takes to find a potential buyer willing to negotiate for the purchase of the invention. Depending on, among other things, the nature, value, cost, and complexity of the invention, this could last for years – as it did in this case.

This case is a paradigmatic example of monopoly extension resulting from application of the *Group One* standard. The unchallenged findings of fact by the Special Master after the 2000 bench trial establish that Lacks embarked on a thorough and extensive marketing campaign to commercialize the ready-for-patenting invention of the Remaining Claims that commenced *more than two years* before the June 6, 1994 critical date. (App. 259a.) Lacks' pre-critical date promotional activities that the Special Master found Lacks had undertaken to commercialize the ready-for-patenting invention of the Remaining Claims included execution of confidentiality agreements with General

Motors Truck & Bus Division and with three different wheel manufacturers. (App. 262a-63a.) Additionally, between August 31, 1992 and June 2, 1994 – the 21 months preceding the critical date – one of Lacks' independent sales representative had at least fifteen (15) meetings with representatives of Ford Motor Company ("Ford") to persuade Ford to purchase wheels made with the method of the Remaining Claims. (App. 263a-64a.) In June 1993, Lacks staged two promotional "Technology Updates" – one for Chrysler representatives and one for Ford – to show off its new technologies. At both shows, Lacks displayed sample cladded wheels that would, if purchased by an OEM, be manufactured using the method of the Remaining Claims. (App. 265a.) Additionally, Lacks sales representatives also had several meetings Accuride, a wheel manufacturer, to promote its new technology. (App. 265a-66a.)

Not surprisingly, based on this and other evidence, the Special Master found that:

> The record abundantly establishes a thorough and extensive campaign by Lacks to exploit competitively, to use for profit and to commercialize the ready-for-patenting method, commencing two years before the June 6, 1994 critical date. After the May, 1992 ready-for-patenting date, Lacks made pre-critical date commercialization efforts with both wheel manufacturers and OEMs. Lacks widely promoted the use of a specific composite wheel assembly technique, namely, the assembly technique of its later-granted method claims, to make wheels for *any and all* future vehicle models. Its sales and solicitations took the form

> of demonstrations of physical samples of prototypes made in accordance with the asserted method claims, and repeated sales contacts with the same potential customers to highlight the advantages of the resulting products. (App. 259a-60a (emphasis in original).)

Notwithstanding that Lacks had been actively promoting and seeking to profit from the invention of the Remaining Claims for two years before the critical date, the Federal Circuit reversed because the Special Master had applied the *RCA Corp.* commercialization standard. (App. 141a-45a.) The court remanded so that the evidence could be reviewed under the new *Group One* standard to see if any of Lacks' pre-critical date activities rose to the level of a binding commercial offer for sale. (App. 145a.) Thus, application of the *Group One* standard potentially gave Lacks as much as two extra years before the critical date in which to commercially exploit its invention – yet without triggering the on-sale bar.

This case is not isolated. In *Linear*, after a bench trial, the district court found that the plaintiff had undertaken extensive pre-critical date promotional activities, including distributing data sheets detailing the new product, distributing newsletters, and promoting the product at trade shows. *Linear*, 275 F.3d at 1046. These efforts had resulted in orders for the product from several customers. *Id.* at 1047. The Federal Circuit acknowledged that these activities would have triggered the on-sale bar under the *RCA Corp.* standard. *Id.* at 1049. Nevertheless, it reversed the trial court's invalidity ruling because none of the

activities rose to the level of a binding offer to sell under the *Group One* test. *Id.* at 1051.

The evidence developed after remand in this case regarding sales practices in the automotive industry shows that product development, safety testing, and product validation – all of which occur *after* an OEM has decided to use a new product – typically take more than two years to complete. (App. 68a.) The record demonstrates that under the OEMs' standard contracting procedures, the first document in these long-term relationships that uses formal contractual offer language comes at the end of the product development period, not the beginning – and is styled as an offer to buy from the OEM, not an offer to sell from the patentee. (App. 59a, 65a, 67a-69a.)

Group One's formalistic contract law standard is easily manipulated. Inventors can aggressively commercialize their inventions while delaying the start of the one-year grace period by omitting from documents shared with potential customers key contractual terms necessary to show a binding offer for sale. Indeed, they can accomplish the same end by reciting that a particular document is not intended to be a binding offer and that the inventor will not be bound without a fully-executed agreement. (App. 118a.) "Such calculated maneuvers could potentially avoid the otherwise potentially binding effect of their offer, and enable them to freely prolong their pre-filing commercial exploitation without jeopardy to their patent rights." (App. 118a.)

Nothing in Section 102(b), *Pfaff*, or any other precedent prior to *Group One*, suggests that Congress intended to allow inventors more than one year to

commercially market their inventions without triggering the on-sale bar. To the contrary, and as the result in this case demonstrates, the *Group One* test contravenes the policy considerations clearly stated in *Pfaff* and the other cases discussed above.

3. The *Group One* Test Results in a Lack of Clarity and Certainty for Inventors and for Courts, as well as a Lack of Uniformity Among Industries

The *Group One* test also undermines the interest in providing inventors with "a definite standard for determining when a patent application must be filed." *Pfaff*, 525 U.S. at 65. Contrary to the Federal Circuit's view, questions of *whether* a party has made a binding offer, *which* party made an offer, or *what* the terms of a particular offer are, cannot be answered by the application of a bright line rule of law. When it first set forth the new test, the Federal Circuit advised that as a general proposition, it would look to the Uniform Commercial Code ("UCC") for guidance on the issue. *Group One*, 254 F.3d at 1047. As the Federal Circuit was quickly forced to acknowledge, however, the UCC does not define "offer." *Linear*, 275 F.3d at 1050. Thus, the Federal Circuit's bright-line test quickly dissolved, and it stated that henceforth it would "look to the common law to guide [its] inquiry." *Id.* It set forth the following guidelines for determining whether a commercial offer for sale had been made:

> An offer is the manifestation of willingness to enter into a bargain, so made as to justify another person in understanding that his assent to that bargain is invited and will conclude it. *Restatement of Contracts (Second)* § 24 (1981));

> *accord* Richard A. Lord, *Williston on Contracts* § 4:13, at 367 (4th ed. 1990) (explaining that "in order for an offer to exist, it must constitute a manifestation communicated to the offeree so as to justify his understanding that by assenting a bargain will be concluded").

Id.

This adds nothing in terms of clarity or certainty. The UCC recognizes that "[a]n agreement sufficient to constitute a contract of sale may be found even though the moment of its making is uncertain." UCC §2-204(2). There are also "many cases at common law, not governed by the Uniform Commercial Code, where it is clear that a contract has been formed, but the process of offer and acceptance—*if there was one*—cannot be reconstructed." CORBIN ON CONTRACTS §1.12, P. 33, Revised Edition West Pub. 1993 (emphasis added).

That fact that a contract can be made, even though the offer remains unidentifiable, highlights a serious defect in the *Group One* test. Situations will arise where an inventor and a purchaser have made a contract for the purchase of a new product, but the date of the offer for sale – *if there was one* – cannot be reconstructed from the evidence. In such circumstances, the *Group One* test utterly collapses.

The *Group One* test also undermines the interest of having national uniformity in the application of patent law, which the Federal Circuit hoped to promote. *See Group One*, 254 F.3d at 1047 (noting the importance of having a uniform national rule regarding the on-sale bar). The post-remand discovery in this case is filled

with evidence regarding intricacies of contract formation that are peculiar to the automotive industry. (App. 52a-69a.) Both remands by the Federal Circuit in this case recognize that industry custom and practice inevitably influence how industry participants perceive communications, and thus impact whether a communication can reasonably be perceived as a binding offer for sale. Presumably, many other industries also have their own unique modes of communication and their own idiosyncratic standards and customs regarding contract formation. In such industries, application of the *Group One* test will require litigants and courts to delve deeply into these peculiarities every time the on-sale bar is an issue. This is neither likely to create a definitive body of law that is easy for the courts to apply, nor is it likely to give clear guidance to inventors hoping to understand when they must file their patent applications.

CONCLUSION

For the reasons stated above, the petition for a writ of *certiorari* should be granted.

Respectfully submitted,

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APPENDIX

APPENDIX A

NOTE: This disposition is nonprecedential.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

No. 2008-1167

[Filed November 21, 2008]

LACKS INDUSTRIES, INC.,

Plaintiff-Appellant,

v.

MCKECHNIE VEHICLE COMPONENTS USA, INC. (doing business as Thompson International),

Defendant-Appellee,

and

HAYES WHEEL INTERNATIONAL, INC.,

Defendant-Appellee.

Before MICHEL, Chief Judge, CLEVENGER and MOORE, Circuit Judges.

MICHEL, Chief Judge.

Plaintiff-Appellant Lacks Industries, Inc. ("Lacks") appeals from the grant of summary judgment of invalidity in favor of Defendants-Appellees McKechnie Vehicle Components USA, Inc. and Hayes Wheel International, Inc. (collectively, "Defendants"), and the denial of Lacks' motion for summary judgment on validity. See Order, Lacks Indus., Inc. v. McKechnie Vehicle Components USA, Inc., No. 96-75692 (E.D.Mich. Nov. 20, 2007) ("Summary Judgment Order"). The district court held that claims 11-13, 20-22, and 24-25 ("the Remaining Claims") of United States Patent No. 5,597,213 ("the '213 patent") were invalid under 35 U.S.C. § 102(b) due to Lacks' alleged pre-critical date on-sale activities. We heard oral argument on November 6, 2008. We affirm the district court's denial of Lacks' motion for summary judgment as we find no abuse of discretion. However, because we conclude that there remain genuine issues of material facts, the district court's grant of Defendants' motion for summary judgment is reversed, and the case is remanded.

I. BACKGROUND

Lacks commenced a multi-patent infringement action against Defendants in the United States District Court for the Eastern District of Michigan on December 18, 1996. In this appeal, the only patent left is the '213 patent. The claims at issue, the Remaining Claims, all relate to methods for assembling an overlay to a wheel.

This is our second review of the protracted litigation. In the first round, a special master found

after a bench trial that Defendants infringed the Remaining Claims but that the same claims were invalid under § 102(b) as a result of Lacks' pre-critical date commercial activities. The Special Master found that none of Lacks' activities was a commercial offer for sale as defined by contract law. However, he concluded that under the totality of the circumstances, there was a definite offer. The district court adopted the Special Master's findings and conclusions.

On appeal and cross-appeal to this court, we affirmed the finding of infringement but vacated the invalidity decision. Lacks Indus., Inc. v. McKechnie Vehicle Components USA, Inc., 322 F.3d 1335 (Fed. Cir. 2003). We concluded that the Special Master erred by applying an outdated legal standard that was superseded by Group One, Ltd. v. Hallmark Cards, 254 F.3d 1041, 1048 (Fed. Cir. 2001), a decision handed down after the Special Master issued his findings and conclusions. Lacks Indus., 322 F.3d at 1347. We remanded the case with the instruction that "the district court (or Special Master) should resolve whether or not it needs to take additional evidence on sales practice in the automotive industry to determine if the sales promotion activities by Lacks rise to a contractual offer for sale (and, of course, take such evidence if necessary)." Id. at 1351.

On remand, the Special Master determined that additional evidence regarding sales practice in the automotive industry was indeed warranted and that further discovery was also warranted to explore "what subsequently occurred in ... [Lacks'] sales promotional activities that [were] already of record." After extensive discovery, the parties filed cross-motions for summary judgment on the issue of whether the

Remaining Claims were invalid under § 102(b) because of Lacks' alleged on-sale activities. The Special Master found that five pre-critical date documents constituted commercial offers for sale, as defined in Group One. The district court adopted the Special Master's Report and Recommendation in its entirety, denied Lacks' motion for summary judgment on validity, and entered summary judgment of invalidity in favor of Defendants.

Lacks timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

II. DISCUSSION

A. Standard of Review

We review a district court's grant of summary judgment de novo. Ethicon EndoSurgery, Inc. v. U.S. Surgical Corp., 149 F.3d 1309, 1315 (Fed. Cir. 1998). By contrast, we give considerable deference to the trial court, and "will not disturb a trial court's denial of summary judgment unless we find that the court has indeed abused its discretion." Little Six, Inc. v. United States, 280 F.3d 1371, 1373 (Fed. Cir. 2002) (citation and quotation omitted).

Summary judgment is appropriate when no genuine issue as to any material fact has been shown by the non-movant's evidence and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). Thus, summary judgment may be granted when no "reasonable jury could return a verdict for the nonmoving party." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). In deciding whether summary judgment is appropriate, we view the

evidence in a light most favorable to the opposing party and resolve doubts in its favor. Ethicon, 149 F.3d at 1315. This means all reasonable inferences must be drawn in the non-movant's favor. At the same time, "in ruling on a motion for summary judgment, the judge must view the evidence presented through the prism of the substantive evidentiary burden." Anderson, 477 U.S. at 254.

B. Analysis

The district court adopted the Special Master's findings and conclusions that five documents constituted pre-critical date commercial offers for sale under § 102(b) and that, all of the Remaining Claims were invalid. The parties dispute: (1) whether any of the documents rises to the level of a commercial offer under the Group One standard; (2) whether some of the documents were communicated to the alleged offerees prior to the critical date; and (3) whether the subject matter of any of the alleged offers correlates to the methods of the Remaining Claims.

To prevail on an on-sale bar defense, an accused infringer must demonstrate by clear and convincing evidence that there was a definite sale or offer for sale of the claimed invention prior to the critical date. Linear Tech. Corp. v. Micrel, Inc., 275 F.3d 1040, 1047 (Fed. Cir. 2001) (citation and quotation marks omitted). "Only an offer which rises to the level of a commercial offer for sale, one which the other party could make into a binding contract by simple acceptance (assuming consideration), constitutes an offer for sale under § 102(b)." Group One, 254 F.3d at 1048. In addition, to satisfy the on-sale bar, the subject matter of the sale or offer for sale must satisfy each

limitation of the claim, though it may do so inherently. Scaltech, Inc. v. Retec/Tetra, L.L.C., 269 F.3d 1321, 1329 (Fed. Cir. 2001). Inherency, however, may not be established merely by probabilities or possibilities. Id.

1. The Correlation Between the Alleged Offers and the Methods of the Remaining Claims

Lacks argues that the five documents cannot invalidate the Remaining Claims under the on-sale bar because they "do not unambiguously require practice of any of the methods of the Remaining Claims." The Special Master rejected Lacks' argument on three grounds: the law of the case, waiver, and the absence of affirmative evidence. We address each in turn.

First, the Special Master noted that in the prior round of litigation, he had found that "the assembly method that Lacks was offering to perform ... coincided with the subject matter of the Remaining Claims." Acknowledging that we vacated and remanded the invalidity ruling, the Special Master nevertheless explained that "[n]othing is described as vacated except the 'finding of invalidity.'" He stated that his "earlier reliance on a later superseded legal standard to reach the ultimate conclusion of invalidity did not taint the underlying findings concerning such issues as ... the correlation between the assembly method that Lacks was attempting to commercialize and the method covered by the Remaining Claims." Therefore, the Special Master concluded that his factual conclusions on the correlation issue "survived the Federal Circuit's decision and are part of the mandate" and "constitute the law of the case." We disagree.

The doctrine of law of the case generally bars retrial of issues that were previously resolved on appeal, assuming one was taken. Intergraph Corp. v. Intel Corp., 253 F.3d 695, 697 (Fed. Cir. 2001). Issues not decided by the reviewing court in a prior proceeding are not covered by the law of the case doctrine. E-Pass Techs., Inc. v. 3Com Corp., 473 F.3d 1213, 1218 (Fed. Cir. 2007) (citation and quotation omitted). In addition, courts may depart from the law of the case under certain circumstances, including the discovery of new and different material evidence that was not presented in the prior litigation, or an intervening change of controlling legal authority, or when the prior decision is clearly incorrect and its preservation would work a manifest injustice. Id. at 698.

In the last appeal, we did not decide the correlation issue. We first note that the Special Master's findings on correlation in the first round of litigation is insufficient as it includes only general conclusions, and no claim-by-claim and limitation-by-limitation analysis, as we show later in this opinion. More importantly, the five documents now at issue were not even part of the record then. We faced no factual findings by the Special Master on the correlation issue regarding these newly-discovered documents. Thus, we could not have affirmed, explicitly or implicitly, any factual finding not in existence at the time of the last appeal. The five specific documents were only discovered post-remand and then used for determination of the commercial offer for sale under the new Group One standard. They are substantially different from the evidence gathered and adjudicated under the prior, totality-of-circumstances standard.

Therefore, law of the case does not settle the correlation issue.

Similarly, in the last appeal, Lacks could not have challenged the correlation issue regarding these specific documents because they were not a part of the record. Accordingly, Lacks did not waive its no-correlation argument with respect to these five documents.

Lastly, the Special Master faulted Lacks for "not com[ing] forward with any affirmative evidence that the offered assembly method was other than the patented method." Here again, the Special Master erred. As we have previously stated, "[a] nonmovant need not always provide affidavits or other evidence to defeat a summary judgment motion. If, for example, the movant bears the burden and its motion fails to satisfy that burden, the non-movant is not required to come forward with opposing evidence." Zenith Elecs. Corp. v. PDI Comme'n Sys., 522 F.3d 1348, 1363 (Fed. Cir. 2008).

In this case, Defendants, having the ultimate burden of proving invalidity by clear and convincing evidence, also have the initial burden of going forward with evidence to support their allegation that there is at least one such offer for sale that corresponds to the methods of Remaining Claims. On appeal, Defendants point to their Reply Brief in support of their motion for summary judgment. They argue that "the record includes a veritable mountain of case-by-case evidence that the process offered by Lacks in each of the Five Offers did indeed correspond to the invention of the Remaining Claims." They assert that "[t]his evidence

constitutes a powerful prima facie showing" on the correlation issue.

However, the portion of the Reply Brief that Defendants cite contains only vague, general statements. We discern neither claim-by-claim nor limitation-by-limitation analysis of whether the subject matter of any of the five alleged offers corresponds to the methods of any of the Remaining Claims.[1] For example, Defendants assert that during the pre-critical date period, "Lacks focused exclusively on the invention of the Remaining Claims as the means for attaching a 'closely-conforming' cladding to a wheel." We first observe that during the same time period, Lacks filed several other patent applications covering different methods for assembling an overlay to a wheel. Indeed, the '213 patent itself includes several other assembly methods. Such objective evidence appears to be in direct contradiction with Defendants' assertion. At the very least, under the appropriate legal standard for summary judgment, when the evidence is viewed in a light most favorable to Lacks, we cannot conclude that the subject matter of any document satisfies each and every claim limitation of any of the Remaining Claims. See Scaltech, 269 F.3d at 1329.

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[1] Under the patent statute, the validity of each claim must be considered separately. See 35 U.S.C. § 282 ("Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims . . . ."). The district court, in adopting the Special Master's findings, erred in only considering a single claim in the analysis.

Because Defendants did not meet their initial burden to support their allegation "that the process offered by Lacks in each of the Five Offers did indeed correspond to the invention of the Remaining Claims," the district court erred in adopting the Special Master's findings on the correlation issue and in granting summary judgment of invalidity in Defendants' favor.

2. The Pre-Critical Date Offers for Sale

With respect to the pre-critical date offers, we hold that genuine issues of material fact exist as to whether any of the five documents in dispute rises to the level of a commercial offer or whether some of the alleged offerers were communicated to the offerees prior to the critical date. Therefore, the grant of summary judgment of invalidity in Defendants' favor was inappropriate for this reason as well.

For example, the Special Master concluded that "in accordance with the course of dealing and usage of trade in the automobile industry," all five documents satisfied the Group One test for a commercial offer. It is true that when we remanded the case, we instructed that the district court should consider the sales practice in the automobile industry to determine if any of Lacks' documents of its sales activities rises to a contractual offer for sale. Lacks Indus., 322 F.3d at 1351. On remand, Defendants' experts submitted that in the automobile industry, an OEM, such as Chrysler, would often accept a supplier's initial quote, such as a SCORE proposal, subject to possible future revision. However, Lacks' witnesses testified that the purpose of submitting a SCORE proposal was "first to garnish [if Chrysler is] even interested and then [if the

proposal is] even valid . . . ." When viewing this record in a light most favorable to Lacks and resolving doubts in favor of Lacks, we cannot conclude that Defendants have established an automobile industry practice by clear and convincing evidence such that a reasonable fact-finder could not decide in Lacks' favor.

Similarly, one alleged offeree testified that there was no reason for him to think that he received a Lacks' internal memorandum, an alleged offer, after the critical date. However, he also stated that because it had been so many years, his memory was very vague.[2] Another alleged offeree testified that he did not believe that another Lacks' internal memorandum, also an alleged offer, was ever given to him by Lacks. We conclude, based on such evidence, especially when viewed in a light most favorable to Lacks, that there are genuine issues as to material facts regarding if and when the documents at issue were communicated to the alleged offerees. Because a reasonable fact finder could find that there is no clear and convincing evidence that these documents were communicated to

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[2] At oral argument, our attention was brought to the witness's testimony stating that "there's no reason for me to think it was after [the critical date,] I guess. I guess that's awful[ly] vague. It's been so many years." When asked whether he considered this to be clear and convincing evidence, Defendants' counsel answered "Yes!" We are aware of counsel's zealousness in representing the clients. We are also mindful that this litigation has been drawn out for much too long. Still, we are hardpressed to equate "awful[ly] vague" speculation to clear and convincing evidence. It is our opinion that, an effective advocate would better serve the clients' interests, and become a more trustworthy officer of the court, by using sound judgment to deal with less favorable facts, not by asserting questionable statements, even when under pressure.

the alleged offeree prior to the critical date and therefore, could return a verdict for Lacks, summary judgment of invalidity in favor of Defendants is inappropriate.

Lacks asserts that the district court incorrectly denied its motion for summary judgment on validity. However, the trial court has discretion to deny a motion for summary judgment. Lacks does not argue, and we do not find, any abuse of discretion. Therefore, the district court's denial of Lacks' motion for summary judgment is affirmed.

III.

In sum, we affirm in part, reverse in part, and remand. We affirm the district court's denial of motion for summary judgment to Lacks on validity. We reverse and remand the district court's grant to Defendants summary judgment of invalidity. On remand, the district court should decide whether Defendants' can establish by clear and convincing evidence: (1) that any of the five documents at issue rises to the level of a commercial offer for sale under the Group One standard; (2) if so, that the same document was communicated to an offeree prior to the critical date; and (3) that the subject matter of the document satisfies each and every claim limitation of any of the Remaining Claims. We assume that the district court (or the Special Master) will apply the correct legal standard in the further proceedings consistent with this opinion. If it does not find the Remaining Claims invalid, the court must then determine the extent of the damages Lacks suffered as a result of the infringement of the Remaining Claims by Defendants.

APPENDIX B

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

No. 96-75692

[Filed November 20, 2007]

LACKS INDUSTRIES, INC., a Michigan Corporation,

Plaintiff,

-vs-

McKECHNIE VEHICLE COMPONENTS USA, Inc., dba THOMPSON INTERNATIONAL, a Delaware Corporation, and HAYES WHEEL INTERNATIONAL, INC., a Delaware Corporation,

Defendants

Hon. John Feikens

Richard D. Grauer, Special Master

ORDER ON CROSS-MOTIONS FOR SUMMARY JUDGMENT

Before the Court are the parties' cross-motions for summary judgment on the dispositive issue of whether the Remaining Claims (claims 11-13, 20-22 and 24-25) of U.S. Patent No. 5,597,213 are invalid under 35 U.S.C.§102(b) because of alleged on-sale activities of Plaintiff Lacks Industries, Inc.

Pursuant to a series of Orders of Appointment, including this Court's Second Amended Order of Appointment of Special Master, dated December 13, 2006, these motions were referred to Special Master Richard D. Grauer. The Master's Report and Recommendation, dated August 15, 2007, recommended that Defendants' motion for summary judgment of invalidity of the Remaining Claims be granted, and that Plaintiff's motion for summary judgment that the Remaining Claims are valid and infringed be denied. Plaintiff filed its written Objections to the Report and Recommendation, and Defendants subsequently filed their Joint Response to such Objections.

The Court has considered the Report and Recommendation, as well as Plaintiff's Objections and Defendants' Joint Response. Paragraph 8 of the Second Amended Order of Appointment directed that the Special Master's findings of fact will be final, as permitted by Rule 53(g)(3)(B), Fed. R. Civ. P. The parties did not object to that procedure. Upon due consideration, the Court adopts the findings of fact contained within the August 15, 2007 Report and Recommendation.

Aided by Plaintiff's Objections and Defendants' Joint Response, and as required by Rule 53(g)(4), the Court has considered *de novo* the Special Master's recommended conclusions of law. The Court finds Plaintiff's objections thereto to be without merit, and therefore adopts those recommended conclusions of law.

The Court has also noted the Master's "Additional Considerations" (pp. 78-83 of the Report and Recommendation), and specifically endorses the analysis and conclusions presented therein.

Accordingly, THE COURT HEREBY ADOPTS the Special Master's Report and Recommendation of August 15, 2007, and IT IS HEREBY ORDERED that:

1. Defendants' Joint Motion for Summary Judgment that the Remaining Claims U.S. Patent No. 5,597,213 are invalid is GRANTED; and

2. Plaintiff's Motion for Summary Judgment that such claims are valid and infringed by Defendants is DENIED.

s/John Feikens
John Feikens
United States District Judge

Dated: 11/20/2007

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

No. 96-75692

[Filed November 20, 2007]

LACKS INDUSTRIES, INC., a Michigan Corporation,	)
Plaintiff,	)
-vs-	)
McKECHNIE VEHICLE COMPONENTS USA, Inc., dba THOMPSON INTERNATIONAL, a Delaware Corporation, and HAYES WHEEL INTERNATIONAL, INC., a Delaware Corporation,	)
Defendants	)

Hon. John Feikens

Richard D. Grauer, Special Master

FINAL JUDGMENT

The Special Master's Report and Recommendation of August 15, 2007 in the above-captioned matter having been considered by the Court, along with Plaintiff's Objections and Defendants' Joint Response, and the Court having adopted the Report and Recommendation and granted Defendants' Joint

Motion for Summary Judgment by a separate Order of this date:

IT IS HEREBY ORDERED, ADJUDGED AND DECREED that:

1. Final judgment is entered in favor of Defendants on all of Plaintiff's claims, and Plaintiff's claims are dismissed with prejudice;

2. The Remaining Claims (claims 11-13, 20-22 and 24-25) of U.S. Patent No. 5,597,213 are invalid under 35 U.S.C.§102(b); and

3. Costs shall be allowed to Defendants and taxed against Plaintiff.

s/John Feikens
John Feikens
United States District Judge

Dated: 11/20/2007

APPENDIX C

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

No. 96-75692

[Filed August 15, 2007]

LACKS INDUSTRIES, INC.,	)
	)
Plaintiff,	)
	)
v.	)
	)
McKECHNIE VEHICLE COMPONENTS USA, INC., d/b/a THOMPSON INTERNATIONAL; HAYES WHEEL INTERNATIONAL, INC.; and HAYES WHEELS INTERNATIONAL-MICHIGAN, INC.	)
	)
Defendants	)

Hon. John Feikens

Richard D. Grauer, Special Master

Special Master's Report And Recommendation On Cross-Motions For Summary Judgment Concerning Patent Invalidity Defense Based On Alleged On-Sale

I. Background

Before the Court are the parties' cross-motions concerning the one remaining defense in this patent infringement lawsuit, namely, whether certain claims of U.S. Patent No. 5,597,213 ("the '213 Patent) are invalid under 35 U.S.C. §102(b) by virtue of an alleged on-sale of the claimed invention by patent-owner Lacks Industries ("Lacks"). Specifically, the invalidity defense concerns claims 11-13, 20-22 and 24-25 ("the Remaining Claims") that remained after an earlier summary adjudication of the other originally asserted claims.

An understanding of the several legal and factual issues addressed here requires familiarity with the procedural history of this long-pending lawsuit. By "Stipulation and Order Regarding Appointment of Special Master," dated February 15, 2000, the Special Master was directed to "make all factual findings and legal conclusions necessary to determine" whether the method used to assemble Defendants' accused products infringed the Remaining Claims of the '213 patent, and whether such claims are invalid under 35 U.S.C.§102(b) because of either Lacks' own "on sale" activities or Defendants' "on sale" or public use activities more than one year before the filing date of the '213 Patent.

Following a five-day bench trial of the liability phase in June, 2000, the Special Master found that (1) Defendants had literally infringed all of the Remaining Claims of the '213 Patent; (2) the Remaining Claims were not invalid as a result of any prior offer for sale or public use by Defendants; but (3) the Remaining Claims were invalid as a result of Lacks' own

pre-critical date "on sale" activities in violation of Section 102(b). After a hearing on the parties' respective objections, and amendments by the Special Master to his original Report and Recommendation (hereafter, "Amended Liability R & R"), the District Court adopted the Special Master's amended findings and conclusions of April 17, 2001 in their entirety, and entered judgment against Lacks on April 23, 2001.

On appeal and cross-appeal to the Court of Appeals for the Federal Circuit, the Court, *inter alia*, affirmed the District Court's finding of literal infringement of the Remaining Claims of the '213 Patent and the finding that those claims had not been proven invalid as a result of the pre-critical date public use or on-sale activities of the Defendants.[1] With respect to the finding that Lacks' own on-sale activities violated Section 102(b), the Court concluded that the Special Master and District Court erred by applying an outdated legal standard[2] that had been superseded by the Federal Circuit's later decision in *Group One, Limited v. Hallmark Cards*, 254 F.3d 1041, 1048 (Fed. Cir. 2001). The Federal Circuit's *Group One* decision, in turn, was based upon its interpretation of the 1998 U.S. Supreme Court decision in *Pfaff v. Wells*

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[1] *Lacks Industries, Inc. v. McKechnie Vehicle Components USA, Inc. et al*, 322 F.3d 1335, 1351 (Fed. Cir. 2003).

[2] In *RCA Corp. v. Data Gen. Corp.*, the Court had held that "[t]he requirement of a *definite* offer excludes merely indefinite or nebulous discussion about a possible sale . . . . [T]he requirement may be met by a patentee's commercial activity which does not rise to the level of a formal 'offer' under contract law principles . . . ." 887 F.2d 1056, 1062 (Fed. Cir. 1989) (emphasis in original).

Electronics, Inc., 525 U.S. 55, which held in pertinent part:

> We conclude, therefore, that the on-sale bar applies when two conditions are satisfied before the critical date. *First, the product must be the subject of a commercial offer for sale.* An inventor can both understand and control the first commercial marketing of his invention. The experimental use doctrine, for example, has not generated concerns uncertainty should attend a rule that measures the application of the on--sale bar of Section 102(b) against the date when an invention that is ready for patenting is first marketed commercially. . . .
>
> *Second, the invention must be ready for patenting.* . . .

Id. at 67 (emphasis added).

The first condition or prong of *Pfaff's* two-part test is the one that the Federal Circuit further defined in *Group One*, as follows: "[O]nly an offer which rises to the level of a commercial offer for sale, one which the other party could make into a binding contract by simple acceptance (assuming consideration), constitutes an offer for sale under §102(b)." 254 F.3d at 1048.

In view of that intervening re-definition of what constituted an invalidating on sale, the Federal Circuit vacated the District Court's conclusion that Lacks' own on-sale activities violated Section 102(b) and remanded this case, as follows:

> Finally, we vacate and remand the court's adoption of the Special Master's finding that claims 11-13, 20-22 and 24-25 of the '213 patent were invalid as a result of Lacks' pre-critical date commercial activities because he applied an outdated legal standard. *On remand, the district court (or Special Master) should resolve whether or not it needs to take additional evidence on sales practice in the automotive industry to determine if the sales promotion activities by Lacks rise to a contractual offer for sale (and, of course, take such evidence if necessary).*

322 F.3d 1335, 1351 (emphasis added).

Also pertinent to the scope of the Mandate are the following additional comments by the Federal Circuit:

> According to the defendants, Lacks' activities amounted to a contractual offer for sale because '*that is how business is done in the automotive industry*.' We, however, cannot so conclude as a matter of law on the record before us. Although it contains some evidence about how sales are made in the automotive industry, we cannot tell what the fact-finder would have found had he applied the correct legal standard. In fact, the only evidence of industry practice defendants point out to us on appeal is their unsupported description of their own sales experience with Ford. As a result, we vacate the Special Master's finding of invalidity and remand for further consideration. On remand, the district court (or Special Master) may need to take additional evidence on the *practice in the*

> *industry* to determine if the activities by Lacks rise to an offer for sale under the UCC. It may also be possible to make new fact-findings based on the existing record. We leave this determination to the court's sound discretion.

322 F.3d at 1348 (emphasis added).

With respect to the "ready for patenting" second prong of *Pfaff*, the District Court had earlier found that the invention of the Remaining Claims was ready for patenting in May, 1992. 55 F. Supp. 2d 702, 734 (E.D. Mich. 1999). Additional evidence and findings in the Special Master's Amended Liability R & R were consistent with that finding. The parties now dispute whether the earlier rulings concerning the second prong, as well as those still relevant to the first prong of *Pfaff*, are governed by the law of the case. That issue is addressed in a separate Section II-C below.

II. Discussion

A. Relevant Contract Law Principles

The Federal Circuit's earlier 2001 *Group One* decision stated that the existence of an offer for sale should be analyzed "under the law of contracts as generally understood," and, consistent with the present mandate, also noted that "[a]s a general proposition, we will look to the Uniform Commercial Code ('UCC') to define whether, as in this case, a communication or series of communications rises to the level of a commercial offer for sale." 254 F.3d at 1047.

But as the Federal Circuit noted shortly thereafter, "[t]he UCC does not define 'offer,' so we will look to the common law to guide our inquiry." *Linear Technology Corp. v. Micrel, Inc.*, 275 F.3d 1040, 1050 (Fed. Cir. 2001). Further noting that the UCC is a model code that has been adopted in different versions by the states, the Court determined that it "will search [the body of state and federal decisions] for the common denominator for assistance in crafting the federal common law of contract that now governs the on-sale bar." *Id.* at 1048. *See also*, *Group One, supra,* 254 F.3d at 1047.

The relevance of the UCC to the present case is also limited by the fact that it applies to the sale of goods, not methods or services. The UCC provides that "[u]nless the context otherwise requires, this Article [Article 2 – Sales] applies to transactions in goods" (§2-102, emphasis added). "Goods," in turn, are defined in pertinent part as "all things (including specially manufactured goods) which are movable at the time of identification to the contract for sale other than the money in which the price is to be paid, investment securities (Article 8) and things in action' (§2-105(1)). The present issue concerns whether the method of the Remaining Claims was the subject of a commercial offer for sale. A method is the performance of a series of steps, and therefore is in the nature of a service, not goods. While an offer to sell a product (here, a cladded wheel) that was assembled in accordance with that method would be one way to establish an offer to sell the method, that is not the only way such an offer may be proven. This question of the necessary elements of an on-sale of a patented method is further discussed in Section II-B, *infra*.

In *Group One*, the Federal Circuit held that a qualifying offer under 35 U.S.C.§102(b) is one "which the other party could make into a binding contract by simple acceptance (assuming consideration)." 254 F.3d at 1048. In *Linear Technology*, the Court quoted from *Restatement (Second) Contracts*, §24 (1981), which defines an offer as "the manifestation of willingness to enter into a bargain, so made as to justify another person in understanding that his assent to that bargain is invited and will conclude it." 275 F.3d at 1050. However, as stated in §26, also cited by the Court: "manifestation of willingness to enter into a bargain is not an offer if the person to whom it is addressed knows or has reason to know that the person making it does not intend to conclude the bargain until he has made a further manifestation of assent."

Williston, another noted secondary authority, states that:

> "The only general test for determining in any particular case whether an offer exists is to ask whether the facts show that some performance was promised in positive terms in return for something requested by the person making the promise, and asking whether the person to whom the manifestation is made might reasonably have supposed that by acting in accordance with it a contract could be concluded."

Richard A. Lord, WILLISTON ON CONTRACTS §4.7, at 296-97 (4th ed. 1990).

To determine whether a communication is an offer, Corbin states that the court tries to determine "the meaning given to the words and actions" by the speaker and by the person to whom they were communicated. Joseph M. Perillo, CORBIN ON CONTRACTS §2.2, at 107 (Rev. ed. 1993). Continuing, Corbin observes that:

> "Factors to consider include the ordinary meaning of the language; the context of any prior communications between the parties; whether the communication was private or to the general public; any previous course of dealings between the parties; local usage or usage of the trade; the relative completeness of the terms (the more complete, the more likely it is an offer); the subject matter of the offer; and whether it is foreseeable that the recipient would rely upon it."

Id. at 109-10.

Finally, in 2004, the Federal Circuit noted:

> "In sum, whether or not the alleged offer in this case rose to the level of a commercial offer for sale is a factual question to be judged in view of the *circumstances surrounding its making*, taking into account such factors as the status of negotiations, the language of the documents, the terms of any previous inquiry, and the prior course of dealings between the parties [secondary source citations omitted]."

Fisher-Price, Inc. v. Safety 1st, Inc., 2004 U. S. App. LEXIS 17110, **10 (emphasis added).

Notwithstanding the Federal Circuit's direction that inquiry is to be made into the "*circumstances surrounding* [the alleged offer's] making," Lacks accuses Defendants of trying to resurrect the "totality of circumstances" analysis that was rejected in *Group One* and *Pfaff*. But that very analysis is clearly what the Federal Circuit has endorsed and directed. The Federal Circuit's mandate in the present case directs the District Court to examine, and possibly take additional evidence on, the "sales practice in the automotive industry." 322 F.3d at 1351. See also, *Id.* at 1348. Sales practices are comprised of a series of customary actions and circumstances. Furthermore, the fact that *Pfaff* replaced the "totality of circumstances" on-sale bar analysis with the two-prong test, requiring (1) a commercial offer for sale and (2) the invention be ready for patenting, does not *ipso facto* prohibit reliance upon those surrounding circumstances that both judicial and secondary authorities generally apply to the inquiry required by the "commercial offer" prong. Lacks errs in conflating these two distinct uses of the "circumstances" phraseology. In *Group One*, *Linear*, *Lacks* and *Fisher-Price*, the Federal Circuit has defined the Supreme Court's "commercial offer of sale" prong in a way that compels and fully justifies Defendants' detailed presentation of a circumstance-based analysis of the issue.

Although the UCC does not directly apply to the present issue of an on-sale of a method, the UCC-defined terms, "course of dealing" and "usage of trade" may still be useful in the mandated inquiry into "sales practice in the automotive industry." Under UCC §1-303(b), a "course of dealing is a sequence of conduct concerning previous transactions between the

parties to a particular transaction that is fairly to be regarded as establishing *a common basis of understanding for interpreting their expressions and other conduct*" (emphasis added). Section 1-303(c) provides in pertinent part that a "usage of trade is any practice or method of dealing having such regularity of observance in a place, vocation or trade as to justify *an expectation that it will be observed* with respect to the transaction in question. The existence and scope of such a usage must be proved as facts" (emphasis added)[3] Sub-section (d) further states that these terms, along with "course of performance" (*i.e.*, conduct under or after an agreement), "are relevant in ascertaining the meaning of the parties' agreement, may give particular meaning to specific terms of the agreement, and may supplement or qualify the terms of an agreement." Finally, sub-section (e) provides that if it is not reasonable to construe these concepts consistent with each other, then express terms (of an agreement) prevail over course of performance, course of dealing, and usage of trade; course of performance prevails over course of dealing and usage of trade; and course of dealing prevails over usage of trade.

Of these UCC-defined terms, "course of dealing" and "usage of trade" appear to offer the most guidance to the present facts and issues.

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[3] These sections were found in Section 1-205 ("course of dealing" has been slightly amended), as cited by the parties in their pleadings on the present motion. The amendments appear in text bearing "Copyright 2004, by The American Law Institute and National Conference of Commissioners on Uniform State Laws." The draft of these revisions was dated December 31, 2001.

Lacks stresses that, both at common law and under the UCC, course of dealing and usage of trade may be used to explain ambiguities in an agreement or to add missing terms, but cannot be used create an agreement where none previously existed. Defendants agree. Consistent with the definition of "course of dealing," Defendants contend that sales practices in the automotive industry can be used to establish a "common basis of understanding for interpreting their expressions and other conduct,"[4] whereby a particular communication would reasonably have been *interpreted* as an offer, consistent with the *Restatement* definition cited in *Linear Technology*. Lacks does not disagree with that general proposition. Rather, it contends that Defendants are improperly attempting to use industry practice, whether in the form of a course of dealing or usage of trade, to supply the missing manifestation of intent to make an offer that the other party could reasonably believe would conclude the bargain if accepted. As will be discussed further below, industry practices in the automotive industry are characterized by a sequence of steps and relatively informal documentation that precede issuance of the type of formal documentation and purchase orders typically found in conventional commercial transactions in other industries, but yet may be accepted and treated by industry members as potentially binding.

The test defined by *Group One* is whether the offer in question is one "which the other party could make into a binding contract by simple acceptance (assuming consideration)" (emphasis added). It is not

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[4] UCC §1-303b, *supra*.

whether a given offeree would accept the offer. An offeree might reject an offer form many reasons, *e.g.*, unfavorable terms, lack of need for the product or service, or poor reputation of the offeror or the offered product or service. Or, as will be shown below in the case of the automotive industry, the offeree/OEM may have substantial interest in the offered product or service, and find the offered terms acceptable, but nevertheless consider acceptance premature because of the offeree/OEM's need to conduct its own approval testing or further development; or because numerous revisions in the product design after the OEM has selected a particular supplier ("sourced" the product) would otherwise require costly issuance of revised purchased orders following each part design change; or because specific purchasing procedures may mandate that the OEM's purchase order (generated many months or even years later) be treated as the formal "offer."

Under that course of dealing and usage of trade, both parties have "a common basis of understanding" that the initial quotation or offer would not be accepted until much later, and only then after formalized procedures and paperwork were completed. But in the meanwhile, the offeree's actions (such as joint development work) may signal (*i.e.*, generate the "expectation") that there is a deal. As with any contract, it may be subject to modification as the development project proceeds, or even total cancellation if the OEM cancels the project. But under contract law, the early offer would have been binding if it had been accepted.

Nothing in *Group One* suggests to the Special Master that inquiry into these offeree/OEM

motivations or restraints is or should be material to the disposition of an on sale bar issue under the controlling patent law. Rather, the test appears to be: would the offer be binding on the offeror/supplier if it were accepted by the OEM, not would the offer conceivably have been accepted at that early point in the typical pre-production sequence of steps.

B. Commercial Offer of Method Claims

The Remaining Claims are *method* claims, each directed to a series of steps for assembling an overlay or cladding to a wheel. For present purposes, claim 11 of the '213 Patent is representative:

> 11. A method for assembling an overlay to a wheel having a disk portion and a rim portion circumscribing said disk portion, said disk and rim portions defining an outboard surface of said wheel, said method comprising the steps of:
>
> forming said overlay to have an inboard surface configured to face said outboard surface of said wheel upon assembling said overlay to said wheel, said overlay being configured so as to form a gap between said inboard and outboard surfaces upon assembling said overlay to said wheel;
>
> selectively depositing a curable adhesive on at least one of said inboard and outboard surfaces such that said curable adhesive is between said overlay and said wheel upon assembling said overlay with said wheel, said curable adhesive being deposited in an amount that is insufficient to entirely fill said gap; and

> assembling said overlay to said outboard surface of said wheel with said curable adhesive so as to form said gap and permanently secure said overlay to said wheel, at least one void being present between said overlay and said outboard surface of said wheel.

The parties disagree on what must be shown to establish a commercial offer of an invention that is a method, rather than a physical product.

Lacks relies upon *In re Kollar,* 286 F.3d 1326 (Fed. Cir. 2002), for the proposition that Defendants must establish that an offer was made to sell a product in which the claimed method had actually been practiced or performed. Defendants dispute that *Kollar* or any other authority so holds, contending that all that is required is that Lacks have made a commercial offer to perform the steps of the claimed method, without the further requirement that there was an offer to sell a fully-assembled composite wheel in which the claimed method had actually been practiced to make the assembly.

Kollar does not support Lacks' position. The facts there concerned an executed agreement entered for the purpose of conducting research and development, providing for the disclosure of technical information concerning the later-patented process and the grant of a patent license authorizing the operation of plants and the sale of products made by such process. *Id.* at 1330. The agreement contained no indication "that a product of the claimed process was actually offered for sale." *Ibid.* The USPTO had held that this pre-critical date agreement constituted a firm offer to sell embodiments of the claimed process, thus triggering

the §102(b) bar. The Federal Circuit reversed, holding that the agreement was merely a license under future patents, and restating the general rule that "merely granting a license to an invention, without more, does not trigger the on-sale bar of §102(b)." *Id.* at 1330-31. More to the point concerning patented *processes*, the Court noted that:

> We cannot articulate in advance what would constitute a sale of a process in terms of the on-sale bar. Surely a sale by the patentee or licensee of the patent of a product made by the claimed process would constitute such a sale because that party is commercializing the patented process in the same sense as would occur when the sale of a tangible patented item takes place. . . . Actually performing the process itself for consideration would similarly trigger the application of §102(b). See *Scaltech, Inc. v. Retec/Tetra, LLC*, 269 F.3d 1321, 1328, 60 USPQ2d 1687, 1691 (Fed. Cir. 2001)(holding that a claim to a process for treating oil refinery waste was invalid under §102(b) *because the patentee offered to perform the claimed process* more than one year before filing for a patent).

286 F.3d at 1333 (emphasis added). Significantly, in vacating the USPTO's holding that the claimed process was on sale within the meaning of §102(b), the Court stated that the USPTO Board, *on remand*, may inquire both as to whether there was a pre-critical date offer "for sale of a product made using that process . . . [or an act] that commercially exploits the claimed process by offering to *actually perform* that process to commercially produce [various compounds]" (citing

Scaltech, supra) (italics in original, underlining added). 286 F.3d at 1334.

Notably, the Federal Circuit in the cited *Scaltech* case further held that "the fact that the process itself was not offered for sale but *only offered to be used by the patentee* to process waste does not take it outside the on sale bar rule." 269 F.3d at 1328 (emphasis added). The particular pertinence of that holding will become evident in the subsequent analysis of the facts of the present case.

Unlike the facts in *Kollar*, the present case does not involve either the grant of a license, the transfer of know-how or an offer to transfer such rights. Furthermore, Lacks' argument, quoted below, appears to be based on a failure to distinguish between *Kollar's* discussion of an alleged sale of a patented process (*i.e.*, the intangible rights in the executed license agreement) and the present case's alleged commercial offer to perform the patented wheel-cladding process. Lacks contends:

> The Remaining Claims are a method for assembling a cladded wheel. As such, under *Kollar*, because it is a process, it must be carried out or performed as a result of the transaction to constitute a sale of the invention within the meaning of §102(b). *Kollar* at 1332-33. In other words, until there is an offer to sell a tangible product upon which the claimed method was practiced or performed, the claimed process is not on sale for the purposes of the §102(b) on-sale bar.

Lacks' Brief of November 23, 2005, p.19. This misreading of *Kollar* seems to be fundamental to Lacks' opposition to the on-sale defense. The cited support in *Kollar* refers to the executed know-how transfer and license in that case, which the Court was treating as sale of such rights, rather than an "on sale." Hence, the Court's reference to the absence of actual performance of the patented process:

> "Know-how' describing what the process consists of and how the process should be carried out may be sold in the sense that the buyer acquires knowledge of the process and obtains the freedom to carry it out pursuant to the terms of the transaction. However, *such a transaction is not a 'sale' of the invention within the meaning of §102(b) because the process has not been carried out or performed as a result of the transaction*. The same applies to a license to a patent covering a process. The [USPTO] Board in this case failed to recognize this distinction, and therefore erred in concluding that the license to the process under any future patents and the accompanying description of that process, constituted a *sale* of the subject matter of those patents, viz., the process."

286 F.3d at 1332 (emphasis added). Lacks' apparent reliance on this particular language is misplaced for two reasons. First, the statement deals with a mere license (an intangible property right), not an offer to physically perform a patented process. Second, its reference to actual performance of the process was in the context of a completed sale or transfer of the know-how and licensed rights, an element of proof not required here, where the alleged triggering event is a

patent-barring offer to perform the patented process. See, *Scaltech, supra.*

Thus, *Kollar* merely holds that sale of a product made according to the patented process is *sufficient* to trigger the on-sale bar, not that such a sale of the resulting product is *necessary*.

Lacks also cites *Elan Corp. v. Andrx Pharm., Inc.*, 366 F.3d 1336, 1341 (Fed. Cir. 2004) and *Minton v. Nat'l Ass'n of Sec. Dealers, Inc.*, 336 F.3d 1373 as cases that "recently followed" *Kollar*. Neither case supports Lacks' position. *Elan* held that an offer to enter a license under a patent for future sale of a product invention is not an offer to sell the patented invention. *Minton* held that a lease that actually conveyed a fully operational computer program embodying the claimed process was an offer for sale within the meaning of the on-sale bar. Neither case dealt with the issue of whether an offer to perform the steps of a claimed method triggers an on-sale bar under §102(b).

Neither precedent, public policy nor logic suggests any reason that an *offer* to perform a ready-for-patenting process for consideration should be less sufficient to satisfy §102(b) than an *offer* to sell a ready-for-patenting product for consideration. In both cases, the *claimed* invention is being offered. *Scaltech, Inc., supra,* 269 F.3d at 1328.

C. Law of the Case

The Court found that the invention of the Remaining Claims was ready for patenting in May, 1992. 55 F. Supp. 2d 702, 734 (E.D. Mich. 1999). The Special Master's Amended Liability R & R, adopted by

the District Court, noted that the patentee Chase had admitted that one skilled in the art could practice the invention from a May 26, 1992 Lacks drawing. Amended Liability R & R at 61. A Chase-authored chronology (Trial Exh. 58) stated that Lacks had"satisfactorily completed all testing" by October, 1993, and "released product to sales and marketing staff" in January, 1994 (Amended Liability R & R at 72). Furthermore, Lacks admitted that the invention of the Remaining Claims was ready for patenting before the June 6, 1994 critical date. *Id. at 61.* That earlier trial record thus established that the second prong of the *Pfaff* on-sale test had been proven.

The Amended Liability R & R also made extensive findings of fact pertinent to the first prong of *Pfaff*. Among them were the following findings concerning Lacks' pre-critical date efforts to promote customer interest in and sales of the wheel cladding assembly method of the Remaining Claims:

> Lacks is not a wheel manufacturer. Presently, Lacks is both a tier one and tier two supplier. As a tier one supplier, it purchases wheels from the wheel manufacturer, assembles the overlay to it and ships the composite wheel to the OEM. As a tier two supplier, Lacks does not purchase the wheel but the wheel travels the same path, with Lacks performing the assembly steps for the wheel manufacturer. Therefore, a potential Lacks customer might be either the tier one wheel manufacturer or the OEM. In both cases, Lacks would manufacture the overlays and perform the assembly steps of the claimed method . . . .

> The record abundantly establishes a thorough and extensive campaign by Lacks to exploit competitively, to use for profit and to commercialize the ready-for-patenting method, commencing two years before the June 6, 1994 critical date. After the May, 1992 ready-for patenting date, Lacks made pre-critical date commercialization efforts with both wheel manufacturers and OEMs. Lacks widely promoted the use of a specific composite wheel assembly technique, namely, the assembly technique of its later-granted method claims, to make wheels for *any and all* future vehicle models. Its sales solicitations took the form of demonstrations of physical samples of prototypes made in accordance with the asserted method claims, and repeated sales contacts with the same potential customers to highlight the advantages of the resulting products.

Amended Liability R & R at 71-72 (italics in original; underlining added).

> The Special Master finds that the activities summarized above were primarily motivated by Lacks' desire to commercialize its later-patented method of assembling overlays to wheels. Throughout the May, 1992 to June 6, 1994 period, Lacks (1) vigorously solicited wheel manufacturers to whom Lacks could sell overlays and on whose wheels Lacks could perform its overlay-bonding method, and (2) and vigorously solicited OEMs to specify and purchase wheels clad by the later-patented method. The documentary references to

> "development programs" involved programs to design and submit specific wheels to OEMs for their *customer* acceptance and validation testing. These programs were not the *inventor's* programs of experimentation to perfect the patented *method* itself. Well before the critical date, Lacks' own test results were sufficiently conclusive that any remaining interest by Lacks in having potential customers perform tests was incidental and far subordinate to its dominant commercial motivation to persuade the customers to evaluate the resulting product and satisfy themselves that it was acceptable for their purchase and use.

Id. at 77-78 (italics in original; underlining added).

> Lacks' own contemporaneous documentation and trial testimony, summarized above, abundantly establish that (1) the assembly method that Lacks was offering to perform corresponded precisely with the invention of the Remaining Claims, and (2) the overlays and composite wheels that it was offering to sell in conjunction with a wheel-manufacturing partner were to be made by the claimed method.
>
> * * * *
>
> Lacks' own documents and testimony negate its attempt to bring its customer contact activity within the experimental use exception.

Id. at 79-81 (emphasis added).

The parties now dispute whether those earlier findings, indeed, whether *any* of the earlier findings of fact relating to the on-sale defense, survived the

Federal Circuit's decision vacating the judgment of invalidity and its remand for further consideration in the light of the intervening *Group One* standard and sales practices in the automotive industry.

Defendants contend that, under the law of the case doctrine, the following findings concerning previously litigated issues became the law of the case and continue to govern the present continuing adjudication of the on-sale defense: (1) Lacks' pre critical date activities were not undertaken merely to gauge market interest; (2) the invention of the Remaining Claims had been sufficiently tested to negate any claim of "experimental use;" and (3) the assembly method that Lacks was attempting to commercialize to Ford, Chrysler, Motor Wheel and Accuride during the 1992-94 time period was the method covered by the Remaining Claims. According to Defendants, Lacks waived any challenge to those findings because Lacks failed to contest them on appeal to the Federal Circuit, and the Federal Circuit implicitly adopted such findings in its decision and mandate.

To the contrary, Lacks contends that the law of the case doctrine does not apply here because: (1) the Federal Circuit did not consider or adopt any of the on-sale findings of the District Court; (2) the vacating of the on-sale portion of the judgment by the Federal Circuit extinguished all underlying findings of fact; (3) the doctrine does not apply where, as here, there has been an intervening change in the law or discovery of new and highly pertinent evidence.[5]

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[5] During the course of the present remand proceedings, Lacks filed a motion requesting that the Court reconsider its 1999 summary

Under the law of the case doctrine, "findings made at one point in the litigation become the law of the case for subsequent stages of that same litigation." *U.S. v. City of Detroit*, 401 F.3d 448, 452 (6th Cir. 2005), *quoting U.S. v. Moored*, 38 F.3d 1419, 1421 (6th Cir. 1994). In *Exxon Corp. v. U.S.*, 931 F.2d 874 (Fed. Cir. 1991), the Federal Circuit summarized the doctrine as follows:

> The law of the case is a judicially created doctrine, the purposes of which are to prevent the relitigation of issues that have been decided and to ensure that trial courts follow the decisions of appellate courts. The doctrine requires a court to follow the decision on a question made previously during the case. . . . When a judgment of a trial court has been appealed, the decision of the appellate court determines the law of the case, and the trial court cannot depart from it on remand.

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judgment ruling (discussed above) that the invention of the Remaining Claims was ready for patenting as of May 1992. Lacks contended that the law of the case doctrine did not preclude the requested reconsideration because of (1) an alleged intervening change in the controlling law, and (2) the Court of Appeals for the Federal Circuit had vacated this Court's decision invalidating the Remaining Claims concurrently with the present remand. The District Court's Order of February 14, 2007 adopted the Special Master's Amended Report and Recommendation on Lacks' Motion for Reconsideration of Seven-Year-Old Summary Judgment, dated December 18, 2006, that recommended denial of that motion. Much of the following analysis of the applicability of the law of the case doctrine to the present issue concerning the first prong of the *Pfaff* test is taken from that December 18, 2006 R & R.

931 F.2d at 877 (quoting from *Jamesbury Corp v. Litton Indus. Prod. Inc.*, 839 F.2d 1544, 1550 (Fed. Cir. 1988). The Court also noted that the foregoing statement about the law of the case doctrine "is commonly accepted in federal jurisprudence, and should be considered the law of the Federal Circuit as well." *Ibid.* at n.4. Clearly, the trial court "is without choice in obeying the mandate of the appellate court," *In re Roberts*, 846 F.2d 1360, 1363 (Fed. Cir. 1988), and it "must implement both the letter and the spirit of the mandate, taking into account the appellate court's opinion and the circumstances it embraces." *Brunet v. City of Columbus*, 58 F.3d 251, 254 (6th Cir. 1995).

As a general proposition, Lacks appears to be correct in asserting that "a vacated judgment has no preclusive force either as a matter of collateral or direct estoppel or as a matter of the law of the case." *Rumsfeld v. Freedom NY, Inc., 329 F.3d 1320, 1332 (Fed. Cir. 2003).* "[W]hen a judgment is vacated 'all is effectively extinguished.'" *Falcon v. Gen. Tel. Co*, 815 F.2d 317, 320 (1987). But a vacated judgment accompanied by a remand with specific instructions to the lower court requires further analysis. The *Exxon* decision, cited by both parties, quoted with approval 1B Moore's Federal Practice, ¶0.404[10] at 174 (2d ed. 1988), as follows:

> In the case of a remand for further proceedings, the mandate constitutes the law of the case only on such issues of law as were actually considered and decided by the appellate court, *or necessarily to be inferred from the disposition on appeal.*

931 F.2d at 877, fn.7 (Fed. Cir. 1991) (emphasis added). See also, *Laitram Corp. v. NEC Corp.*, 115 F.3d 947, 951 (Fed. Cir. 1997) (" . . . rule is actually applicable only to those issues decided by *necessary* implication.") (emphasis added).

Application of the law of the case doctrine to the District Court's underlying on sale findings therefore requires analysis of the Federal Circuit's opinion in this case to ascertain what was intended by its mandate. *Laitram, supra,* 115 F.3d at 952. As stated by the Federal Circuit, "[t]he crux of the dispute is whether the Special Master applied the proper legal standard to the first prong of the test: whether there was a 'commercial offer for sale.'" 322 F.3d at 1347. The relevant portion of the Federal Circuit's opinion states:

> Defendant-cross appellants urge that any such error [failure to apply the *Group One* standard for "commercial offer for sale"] was harmless because the factors that inform whether there was a contractual offer under the UCC include course of dealing and evidence of the practice in the industry. U.C.C. §1-205. According to the defendants, Lacks' activities amounted to a contractual offer for sale because "that is how business is done in the automotive industry." We, however, cannot so conclude as a matter of law *on the record before us*. Although it *contains some evidence* about how sales are made in the automotive industry, we cannot tell what the fact-finder would have found had he applied the correct legal standard.
>
> * * * *

> As a result, *we vacate the Special Master's finding of invalidity and remand for further consideration*. On remand the district court (or Special Master) *may need to take additional evidence on the practice in the industry* to determine if the activities by Lacks rise to an offer for sale under the UCC.

Lacks Indus., Inc. v. McKechnie Vehicle Components USA, Inc. and Hayes Wheels Int'l, Inc., 322 F.3d 1335, 1348 (Fed. Cir. 2003) (emphasis added). Once again, in its summary of its holdings on the multiple issues that were appealed, the Court stated:

> On remand, the district court (or Special Master) should resolve *whether or not it needs to take additional evidence on sales practice in the automotive industry* to determine if the sales promotion activities by Lacks rise to a contractual offer for sale (and, of course, take such evidence if necessary).

Id. at 1351 (emphasis added).

Nothing is described as vacated except the "finding of invalidity." No criticism, or even discussion, of the underlying factual findings appears in the Court's opinion, except regarding the incompleteness of findings regarding "how sales are made in the automotive industry."[6] Only the *legal standard* applied by the Special Master is found to be erroneous. Most

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[6]As discussed below in this section, Lacks' appeal only challenged "the Special Master's application of the pre-*Group One* standard as to what constituted a definite offer for sale."

significantly, the Court states that additional evidence "*may*" need to be taken, implicitly approving the possibility that the fact-finder may conclude that the mandated findings on how sales are made in the automotive industry can be prepared *without* taking "additional evidence" on that or any other relevant subject. The remand is "for further consideration," not for an entirely new trial of the on-sale defense.

Furthermore, the Special Master's earlier reliance on a later superseded legal standard to reach the ultimate conclusion of invalidity did not taint the underlying findings concerning such issues as Lacks' motivation for its pre-critical date customer contacts, alleged experimental use or the correlation between the assembly method that Lacks was attempting to commercialize and the method covered by the Remaining Claims. The change in the law effected by *Group One* provides no basis for disturbing those subsidiary findings. Those findings were not implicated by the Federal Circuit's decision in *Lacks*, and therefore the law of the case doctrine encompasses those findings.

Therefore, the Federal Circuit's acceptance of the District Court's Amended Findings of Fact and Conclusions of Law is "necessarily to be inferred from the disposition on appeal," excepting only the vacated "finding of invalidity" (because it was based on the incorrect *legal* standard) and the need for supplemental findings on automotive industry sales practices. *Exxon, supra*. Based upon his interpretation of the Federal Circuit's mandate, the Special Master concludes that the remaining portions of the Amended Findings of Fact and Conclusions of Law survived the

Federal Circuit's decision and are part of the mandate. They therefore constitute the law of the case.[7]

As part of the law of the case, those remaining portions of the District Court's earlier decision are, for a second reason, no longer subject to challenge by Lacks. In the appeal to the Federal Circuit, Lacks, by its own admission, "confined its challenge solely to the Special Master's application of the pre-*Group One* standard as to what constituted a definite offer for sale" (Lacks' Reply Brief, p.32). Unchallenged in the appeal were the findings that the assembly method that Lacks was offering to perform, and the composite wheels that it was offering to sell in its various pre-critical date promotional efforts, coincided with the subject matter of the Remaining Claims. Unchallenged were the findings that such activities were not within the experimental use exception, and that the claimed

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[7] This interpretation of this particular mandate, that underlying findings regarding the on-sale issue survived the Federal Circuit's vacating of the invalidity finding in the context of a remand for further consideration, is reinforced by the Federal Circuit's ultimate disposition of an appeal from a district court's decision following a similar remand. In *Scaltech, Inc. v. Retec/Tetra, LLC*, 178 F.3d 1378 (Fed. Cir. 1999), the Court concluded that "on the record before us, the district court erred by failing to address whether an embodiment of the claimed invention was offered for sale." *Id.* at 1383. The Court vacated the summary judgment of invalidity by reason of an on-sale, and remanded "for a determination as to whether the process on sale inherently satisfies each claim limitation." *Id.* at 1384. As stated in the Court's decision on a subsequent appeal, "[o]n remand, the district court *sua sponte* granted summary judgment *on the existing record* . . . ." 269 F.3d 1321, 1326 (Fed. Cir. 2001)(emphasis added), and that decision was affirmed. The district court was not required to, and did not, make new findings on the other aspects of the on-sale transaction and events.

invention was "ready for patenting" at the time of those activities. Lacks has therefore waived its right to challenge those underlying findings. *Tronzo v. Biomet, Inc.*, 236 F.3d 1342, 1347-48 (Fed. Cir. 2001) (issues within the scope of the initial district court judgment and not raised on appeal are within the scope of the remand and "foreclosed from further review on remand"); *U.S. v. Adesida*, 129 F.3d 846, 850 (6th Cir. 1997) ("[a] party who could have sought review of an issue or a ruling during a prior appeal is deemed to have waived that decision thereafter, for 'it would be absurd that a party who has chosen not to argue a point on a first appeal should stand better as regards the law of the case than one who had argued and lost").

D. Summary Judgment Standards

Summary judgment is appropriate "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). To defeat summary judgment, the non-moving adverse party "may not rest upon the mere allegations or denials of the adverse party's pleading, but the adverse party's response, by affidavits or as otherwise provided in this rule, must set forth specific facts showing that there is a genuine issue for trial." Fed. R. Civ. P. 56(e). The court's function is not to weigh the evidence or to determine the truth of the matter, but only to determine whether the evidence of record is such that a reasonable jury could return a verdict for the non-moving party. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248-49 (1986). "Where the record taken as a

whole could not lead a rational trier of fact to find for the non-moving party, there is no 'genuine issue for trial.'" *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986). Under these standards, the non-moving party must do more than show there is "some metaphysical doubt" as to the material facts. *Id.* at 586.

E. Sales Practices in the Automotive Industry

The record presented by the parties' respective motion papers includes a substantial amount of documentary and testimonial evidence generated by post-remand discovery authorized by the Special Master. At an earlier stage of the current remand proceeding, when the scope of permissible discovery was vigorously disputed by the parties, the Special Master concluded that discovery should be confined to industry sales practices and subsequent transactional history relating to Lacks' sales promotional activities that were "already of record" (Report and Recommendation Concerning Discovery Following Remand, May 13, 2004, pp. 13-14).[8] The Special Master concluded at that time, consistently with his

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[8]Interestingly, the parties' respective interpretations of the mandate at that time were reversed from those they now espouse. Defendants asserted that "the reason that the case was remanded in the first place was *to re-try the on-sale issue* in light of a change in the law that could not have been anticipated when the case was originally tried" (Defendants' Joint Opposition to Plaintiff's Motion for Protective Order, p.11, emphasis added). Lacks, on the other hand, argued that "The Mandate was specific: it allowed 'additional evidence on the practice in the industry" only and *did not authorize a new trial on all aspects of Defendants' on-sale defense*" (Lack's Memorandum in Support of Motion for Protective Order, p.6, emphasis added).

present interpretation of the mandate, that there was "no authority or justification for either a complete re-trial of the on-sale issue or an unrestricted re-opening of discovery on that issue" (*Id.* at p. 9). A necessary ingredient of that conclusion was the fact that those original findings remained viable as the law of the case, and did not need to be re-litigated.

The augmented record provides a comprehensive overview of the procedures followed by the original equipment manufacturers ("OEMs") such as Ford and Chrysler in acquiring vehicle components and systems from their suppliers. Verified expert reports were submitted by the following four witnesses, and such reports were tested by deposition cross-examination by the respective opposing party:

- Frank S. Schwartz (on behalf of Lacks) has been employed by Lacks since 2002, currently as Director of Marketing for Advanced Technology since 2002. Before joining Lacks, his relevant experience was in sales of automobile lighting equipment to the automobile industry beginning in 1993.

- Jan Ekholm (also on behalf of Lacks) has been employed by Lacks since 2002, currently as Commercial Manager for the Trim Systems division. He was employed by Chrysler from 1965 until his retirement in 2001. His relevant experience there was in various purchasing positions starting in 1985, initially as a buyer for interior and exterior plastic parts, and rising to senior commodity specialist for exterior trim and ornamentation (not including wheel parts).

- Charles D. Ross (on behalf of Defendants), currently an independent consultant regarding purchasing operations, was employed by Ford Motor Company from 1965-2000 in a variety of mid-level and senior management positions, primarily in the field of production purchasing. Ultimately, he became executive director in charge of purchasing for body and assembly. During and shortly before the period relevant to this case, Mr. Ross was director of purchasing for all components that went into engines and transmissions, a sum of $13 billion in purchases, and he was also Ford's purchasing representative in the reorganization of the company's policies and procedures.

- Richard J. Matton (also on behalf of Defendants), currently provides consulting services for automotive suppliers. After serving as a buyer at Ford, he was employed by Chrysler in various purchasing-related positions from 1982-2004, including all aspects of the procurement process for the small car platform (Viper, Sebring convertible and Neon) from 1992-95 and director of chassis quality and supplier management (which included wheels and wheel trim) from 1995-2000.

Other knowledgeable fact witnesses testified by deposition, including:

- Lee Chase, the patentee of the '213 Patent, was Product Development Manager at Lacks at the relevant time period, and was Director of Advanced Technology at Lacks at the time of his 2005 deposition.

- Richard "Terry" Eifert has been employed as a Ford engineer since 1976, with all but the first year or two in tires and wheels. At the time of his 2005 deposition, he was Senior Wheel Engineer, and at the time of the relevant 1993 contacts with Lacks he was Design and Release Engineer on wheels and wheel-related hardware for the F-series trucks, responsible for coordination of design and testing of such components. He submitted a written statement (certified by him to be under penalty of perjury) in 2003, and he was subsequently cross-examined by Lacks concerning that statement and the documents he produced from Ford's files.

- Kent Van Timmeren has been employed by Lacks since 1984, serving as a cost estimator since 1989. His duties included compiling cost estimates or quotes in response to requests from potential customers received through Lacks' sales department.

- Nicholas Mendes was employed by Motor Wheel in various sales capacities from 1968-97, serving as Sales Manager of Automotive Products from 1983-96. He had complete responsibility for the Chrysler account and was knowledgeable of Chrysler's purchasing procedures. His written statement is in evidence, and he was subsequently deposed.

- David Haviland was employed in various sales and marketing capacities at Motor Wheel from 1967 to 1996, the last ten years as Director of

Marketing for Automotive Products. His deposition transcript is in evidence.

As described by Ross, the "lead time" required by North American automobile manufacturers to bring a new vehicle from its program approval stage to commencement of actual vehicle production ("Job #1" launch) during the 1990's was 36-42 months. Parts, systems and the entire vehicle must be designed and tested for integrity, durability, safety, quality and customer acceptance before production tooling could be constructed and manufacturing process capability confirmed. Upon completion of all those steps, component part production and vehicle assembly could begin. The cost for design, testing tooling and manufacturing equipment for a new model vehicle ranged from $800 million to more than $2 billion. Thousands of parts, assemblies and materials, ranging from screws and gaskets to wheels and brake systems to engines and automatic transmissions, had to go through these stages. Competitive pressures caused OEMs to seek ways to shorten this lead time. Ross Report, Exh. 1080, ¶¶IV-1 through 6.

Before the late 1980s, parts procurement by the OEMs followed a rather standardized process for both "off-the-shelf" commodities and for more complex components. As described by Mr. Ekholm, a current Lacks employee and former Chrysler buyer, Chrysler engineers did all the design, development and testing, and prepared all necessary drawings and specifications. That information was given to the appropriate buyer, who prepared a Request for Quotation ("RFQ"). The RFQ typically gave the part number, model year, volume, and plant location, and asked the supplier for weight, material, price, tooling

cost, volume and scheduling. This RFQ and the information prepared by Chrysler Engineering constituted a bid package given to prospective suppliers, who then completed and signed the RFQ and submitted it to the buyer. The Engineering and Finance departments reviewed the returned RFQs, met with the suppliers to resolve remaining questions, and one supplier was ultimately selected. The buyer assigned a purchase order ("PO"), sent it to central processing, from which a PO comprised of the information in the RFQ and Chrysler's standard terms and conditions was sent to the supplier. Ekholm 4/20/95 Dep. at 28-38.

In the late 1980s, however, the OEMs shifted much of the responsibility for design, development and testing to their suppliers.[9] At Chrysler, parts sourced in this new manner were referred to as "ODD Box" parts ("Outside Design and Development"). Ekholm 4/20/05 dep. at 38-40. At Ford and elsewhere they were referred to as "black box" parts, or, if design responsibility was shared, as "gray box" parts. Ross

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[9]*See*, Ben-Shahar and White, Boilerplate and Economic Power in Auto Manufacturing Contracts, *104 Mich.L.R. 953 (2006)*. The authors of this comprehensive article read and compared industry boilerplate contracts and spoke to lawyers who drafted them and to other industry participants. Consistent with the evidence submitted herein, this article states that General Motors, for example, which earlier had produced up to seventy percent of its parts internally, is now only thirty percent integrated. The OEMs have shed whole divisions (such as Delphi and Visteon, and now buy large subassemblies from outside suppliers. *Id.* at 955. At Chrysler, "approximately 70% of the dollar value to make a vehicle (excluding labor) was procured from outside suppliers" (Matton Expert Report, Exh. 1084, ¶VI-D).

Dep. at 52-53; Ross Report, Exh. 1080, ¶IV-8; Schwartz Report, Exh. 1085, ¶B.1.

Chrysler and Ford developed programs to "encourage suppliers to submit cost reduction ideas, provide a disciplined means for assuring the ideas are reviewed and considered, reward suppliers who actively participate in the program, and establish a rigorous follow-up process for submissions" (Ross Report, Exh 1080, pp. 15-16; see also, Matton Report, Exh. 1084, ¶VI-C). The Chrysler program (introduced in 1989) was called "SCORE" (Supplier Cost Reduction Effort), and the Ford program was called "SPECS" (Ford Supplier Purchasing Engineering Cost Savings). Lacks' expert Schwartz testified that the whole goal of the supplier from the time of submission of a SCORE or SPECS proposal was "to sell parts at a proper profit" (Schwartz Dep. at 37).

As described by Ross, Ford developed written procedures, described in its "Full Service Supplier (FSS) Guide" (Exh. 1008), to achieve better control of new model timing (Exh. 1080, ¶¶IV-5-8; Schwartz Report, Exh. 1085, ¶C). Codified in 1993, these procedures had been developing for almost ten years. Ross Dep. at 53. The Guide included a timetable of events for each step of a new vehicle development process, measured in months before Job#1. In the words of the Guide, the "Early Sourcing/Target Agreement" or "ESTA" (one of the "key documents in the Full Service Supplier relationship") "states intention of Ford to source to Supplier; obtains agreement to the Full Service Supplier guide and Statement of Work; and obtains commitment to work towards Targets" (Exh. 1008, Section 2, p.17). The timetable provides that the ESTA is to be finalized by

42 months[10] before Job#1, "work towards obtaining supplier commitment to ESTA" by 40 months, and complete Early Sourcing by 33 months (*Id.* at Section 4, p.43).

The FSS Guide includes a sample ESTA, which includes spaces to fill in the name of the supplier, identification of component or system, "piece price target," and "Job#1 Date" (*Id.* at Appendix p.A-3). Under the "Commitment" heading, the Agreement states: "As a member of the [Program Team], your Company will participate in the design and development process outlined in the Full Service Supplier Guide and the Statement of Work. As the program approaches Job#1, a Purchase and Supply Agreement for production parts will be issued. Ford and your Company will each absorb their own cost of work for this program should a Purchase and Supply Agreement not be issued due to any of the following conditions [including change in program or subsystem/component direction] . . . ." Under the "Targets" heading, it states: "Targets have been developed as follows: Piece Price – at current economic and efficiency levels." Finally, over spaces for signature of the Supplier and various Ford functionaries, the ESTA states: "We accept the conditions stated above and commit to work toward achievement of the targets."

Mr. Ross stated that the three parties to this lawsuit would have been designated by Ford as Full

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[10] The listed benchmark timings are for "Single Model Programs," whereas "Multiple Model Programs" specify an additional 3-5 months of lead time.

Service Suppliers during the time period covered by this case (Exh. 1080, ¶IV-8), and that clad wheels made in accordance with the Lacks Chromtec method would have been considered "more complex" parts under that FSS category, because they were to be used in a high wear area near the road, used chrome-plated plastic on a high visibility component and involved unproven technology of gluing a cover to the wheel (*Id.* at ¶IV-6).

Quotations from suppliers can take a number of forms. Among the alternatives described by Ross are several that are at issue in the present proceedings. For early sourced, more complex components, particularly in non-competitive sourcing situations, the suppliers submit their own written narrative to the OEM as a quotation. Ross cited as examples the following significant quotations exhibits that are discussed below: 1002 to Ford; 1039 and 1040 to Chrysler; and 1044 and 1053 to Accuride (Exh. 1080, ¶IV-9(b). If the supplier is the successful bidder:

> the written narrative 'quotation' *will often be accepted as a binding quotation* and a formal RFQ not issued until shortly before Job#1. This delay in issuing a formal RFQ is a relatively common buyer practice used to reduce paperwork during program development, a period during which many design and part number iterations occur prior to Job#1.

Ibid. See also, *Id.* at pp. 14-15; see also, Schwartz Dep. at 34; Schwartz Report, Exh. 1085, ¶¶A4, B8; Ross Dep. at 68-69; Matton Report, Exh. 1084, ¶VI-G; Matton Dep. at p. 53.

Suppliers also commonly solicit sales by making presentations to OEM engineering and purchasing departments for new technologies, design ideas or manufacturing methods (Exh. 1080, ¶9c). Referring to his Ford experience, Ross stated that when the new process or material is believed ready for production application, Ford Purchasing normally regarded these presentations as "sales pitches," with the supplier's goal being "to sell the new product, process or idea being presented." Such presentations often included specific cost data, relevant vehicle programs, tooling line-up and cost and timing for production part availability.

When asked during cross-examination how he determined whether a particular activity or document was an offer for sale by Lacks, he replied:

> A. . . . The degree of detail tended to tell you whether it was a legitimate offer or whether they were winging it or guessing at the numbers . . . . To the degree you began to get very specific data that said for this program, for this model, at this volume, for this price you'll get it and it's to the nearest penny and it's to the nearest $10 on tooling, you say, okay, tooling, they've gone out and gotten quotes from a tool source as to providing it. The timing, they're not telling me it's about a half a year, they're telling me it's 34 weeks, which says that's very specific and it says, okay, you've gone and found out how long it will take to tool, how long it's going to take you to set up the manufacturing line, and I count on that timing to fit within the model of our program and what it needs.

> And if it's an attractive proposal, then what we will do is choose you as the supplier to do it.

Dep. at 42. Lacks' expert Schwartz agreed that the OEM could determine if the supplier intended to be bound by whether the part was defined (Schwartz Dep. at 17).

With further regard to the relatively informal, yet potentially binding, nature of these sales practices in the automotive industry, Ross observed:

> Representatives in the process are expected to be able to speak for their respective organizations and to commit to cost, timing, design, delivery, quality, etc. issues involving their company and activity. They are also expected to deliver any commitments made by them on behalf of their "home" activity. The point being made here is that, *while a great deal of business between Ford and production parts suppliers is conducted on an informal basis, these informal commitments are regarded as binding as if they were part of a formal written contract.*

Ross Report, Exh. 1080, ¶IV-10 (emphasis added).

Matton, the former Chrysler purchasing executive, described the environment this way:

> In the team environment that we're talking about, again, 1990 to 1994, which was the platform and the SCORE process, things were much more open, there was much more trust.

> People didn't demand purchase orders, many times being invited to a source selection meeting as the supplier was *sufficient for the supplier to know that he was the supplier, even though a purchase order wasn't issued.*

Matton Dep. at 23 (emphasis added). He added that the formal RFQ (request for quote), usually after the part was formally released, "was primarily just a confirming paperwork trail," "confirming what was previously established" (*Id.* at 51-52).

Chrysler's SCORE program was described by former Chrysler procurement official Richard J. Matton. Suppliers would "test the water" concerning their new internally-developed technology by reviewing it with Chrysler engineering and purchasing personnel before submitting a SCORE proposal. If Chrysler decided to pursue the proposal, a SCORE team consisting of Chrysler engineers and a buyer and the supplier would develop an action plan to implement the proposal, including test milestone events, approval requirements and so forth. For new model programs, Chrysler would establish variable cost targets for the team to meet at the part level. Any changes in the part design that would impact the supplier's piece price or tooling cost would be formally documented. A formal purchase order would not be issued until all the action plan items had been completed, including receipt and testing by Chrysler of parts made from production tooling and processes from the supplier's plant. Matton Report, Exh. 1084, ¶VI-F.

Matton contrasted this new SCORE procedure with Chrysler's former purchasing procedures:

> The traditional quotation process once a design was completed by Chrysler with the subsequent issuance of the Purchase Order were [sic] replaced by a "letter of intent", "confirmation of sourcing" letter, or perhaps an e-mail from the buyer that would reference a pre-assigned Purchase Order number or just being invited to a new model program related meeting as "The Supplier" was *sufficient commitment for most suppliers until the Purchase Order was actually issued by Chrysler just prior to New Model Launch startup.*

Id. at ¶VI-G (emphasis added).

Evaluation of these supplier-submitted proposals by Ford and Chrysler required substantial OEM time and resources, and "supplier submissions were expected to be sincere offers to 'deliver' the design features, weight reductions and/or cost savings being proposed" (Ross Report, Exh. 1080 at p.16). According to Matton:

> "when a supplier submitted a SCORE proposal, Chrysler assumed that the supplier had sufficiently researched, developed and validated the SCORE idea . . . since considerable internal resource time and expense is required to review, test, validate, approve and track each SCORE proposal . . . ."

Exh. 1084, ¶VI-F-1; Matton Dep. at 15-16. Ekholm, Lacks' expert and former Chrysler buyer, agreed that the supplier "has to prove to themselves that it's even a good idea before they can submit it to Chrysler" (Ekholm Dep. at 88-89). However, because suppliers

were under pressure to submit proposals in order to be considered for new business, they sometimes submitted proposals having little chance of success. Schwartz Report, Exh. 1085, ¶D and Dep. at 31-32, 45-46. *See generally,* Ekholm Report, Exh. 1088, at Comment on Matton Report, ¶4, and 4/20/05 Dep. at 54-63, 75-94.

The significance of a SCORE proposal from the viewpoint of Tier 1 supplier Motor Wheel was described by Nicholas Mendes. As Motor Wheel's sales manager for automotive products from 1983-96, he had complete responsibility for the Chrysler account. According to Mendes:

> "*A SCORE proposal was an offer to Chrysler* to sell to Chrysler the specified part at a specified price, which represented a specified savings per part. . . . The SCORE proposals *were a commitment* by Motor Wheel to provide the proposed parts to Chrysler based upon the terms of the SCORE proposals."

Mendes Statement, Exh. 1013, ¶¶14, 16 (emphasis added). Such proposals would not be submitted unless Motor Wheel was "fully satisfied that we could produce the part . . . and reflect the cost savings" indicated in the proposal, because "*we would have to live to all of the numbers and all of the commitments*." Mendes Dep. at 41 (emphasis added). According to David Haviland, who was Motor Wheel's Director of Marketing of 1986 96, unless there were very real changes in design or performance of the product, it would be "difficult, if not impossible," for the vendor to increase the price after submission of a SCORE proposal – the vendor was

"*committed to what's in the SCORE proposal.*" Haviland Dep. at 7-17, 61-62 (emphasis added).

Ford's Purchase Order, typically not issued until shortly before Job#1, specifies that it is the offer. Based on that standard language, Lacks argues that the earlier submitted quotes from a supplier cannot be considered offers to sell. Lacks' cross examination of Defendants' expert, retired Ford purchasing executive, Ross, included the following colloquy:

> Q. So basically this [a standard Ford purchasing order] is essentially regarded as an offer from Ford to the supplier?
>
> A. *I didn't treat it as an offer. This was a confirmation of a quote we received from the supplier normally.*
>
> * * * *
>
> Q. So basically the terms and conditions specifically state that the purchase order is the offer?
>
> A. Fine. I understand it from a legal context.
>
> Q. Well, that's what we're talking about.
>
> A. Well, I would say there's also *the practical context of how was it used.*

Dep. at 64-65 (emphasis added). In Matton's words, "that's not consistent *with how business practices were done*" (Matton Dep. at 72, emphasis added).

Thus, in view of this and other previously cited testimony, it is clear that the OEM's could accept the supplier's offering quotation, creating a binding contract, but that would more often than not require numerous subsequent contract revisions as the development program runs its extended course until the purchase order is finally issued just before Job#1. Instead, as a matter of "administrative convenience" (Ross Dep. at 68) rather than avoidance of a contractual commitment, the OEMs choose to defer that formal step. Instead, pursuant to a "common basis of understanding (course of dealing), the OEM manifests its "willingness to enter into a bargain" by "sourcing" the part (*i.e.* selecting a supplier) and moving forward together with that supplier in the development process. The supplier, based on the regularity of observance of this practice in the automotive industry, has "an expectation that [the OEM's practice of eventually issuing a subsequent purchase order] will be observed" (usage of trade).

In "battle of the forms" cases addressing which party's "offer" form was truly the offer, the case law directs that the court must look beyond the words employed on the forms and examine the "totality of the circumstances" to determine which form constituted the offer. *The Mead Corp. v. McNally-Pittsburgh Mfg. Corp.*, 654 F.2d 1197, 1203 (6th Cir. 1981); *Weyburn-Bartel, Inc. v. Zagar, Inc.*, 1996 U.S. Dist. LEXIS 16988 at *7 (W.D.Mich. 1996).

Manton testified that "all parts" are subject to change (Matton Dep. at 80). When asked on cross-examination to confirm that Chrysler wasn't committed until it issued a purchase order, he responded, "I don't think we're ever committed . . . We

never have to order a part" (*Id.* at 73). Ross testified that even after the Purchase Order, both the supplier and Ford could "bow out" of the agreement. Ross Dep. at 60-61. Lacks' employee-experts Ekholm and Schwartz agreed that even a purchase order from Chrysler doesn't mean it is required to ever purchase any parts. Ekholm Dep. at 95; Schwartz Dep. at 41-42. Yet it cannot successfully be argued that these early quotations from suppliers, merely because they are often subsequently modified or even cancelled after informal or formal acceptance, cannot therefore qualify as a commercial offer for sale. Multiple rounds of offers and counter-offers are a familiar part of many commercial and private transactions, and those subsequent negotiations do not negate the status of an original offer as one that the offeror was willing to be bound by if the offeree accepted it.

The specific documentation contended by Defendants to support their commercial offer for sale position typically omits terms that might generally be found in typical commercial transactions in other industries. Among such terms are FOB terms, payment terms, shipping destination, etc. But in the automobile industry, many seemingly missing terms are governed by the OEM's standard terms and conditions and long-term contract documentation. They "are generally assumed to already be known and are normally the same from purchase order to purchase order, based on ongoing dealings with the supplier" (Ross Report, Exh. 1080, p.14; Ross Dep. at 39). Matton testified that the suppliers involved in this lawsuit were all current suppliers, and they "know when they submit something to us, they're going to be bound by our terms and conditions, those are our standard" (Matton Dep. at 52).

By way of example, the record contains the November 19, 1992 long-term contract between Ford and Lacks, which applied to certain specified (but not here relevant) parts and to "all new parts sourced to Lacks Enterprises, subsequent to August 1, 1992 (Exh. 1083). It specifies that "all terms and conditions of Ford's standard Purchase Orders (Attachment II) are in effect." Attachment II, headed "Terms and Conditions," provides (with emphasis added):

> 1. OFFER, ACCEPTANCE, AND MODIFICATION – *This tooling order is an offer to Seller by Buyer* to enter into the purchase and supply agreement it described, and it shall be the complete and exclusive statement of such purchase/supply agreement. Modifications proposed by seller are not part of the agreement without Buyer's written acceptance.
>
> * * * * *
>
> 3. CHANGES – (a) *Buyer at any time in writing may change the design (including drawings, materials and specifications), processing, method of packing and shipping, and the place of delivery.* (b) If any such change affects cost or timing, Buyer shall adjust purchase price and delivery schedules equitably. (c) seller shall not make any change in design, processing, packing, shipping, or place of delivery without buyer's written approval.

The provision of the Ford Long-Term Agreement incorporating Ford's standard terms and conditions is

typical of the automotive industry OEM's practice. Each has its boilerplate form, entitled "Global Terms" or "General Terms" or the like, expressly incorporated into every purchase order, and non-negotiable. They cover issues such as termination rights, warranties and remedies, ownership of tooling, intellectual property rights and service parts. As acknowledged by Lacks' expert, the OEM's standard terms and conditions are "sacrosanct" and "pretty much set in stone" (Schwartz Dep. at 33-34). As observed in the Ben-Shahar & White article:

> There may be no other merchant-to-merchant contractual template that governs such fantastic economic stakes – hundreds of billions of dollars per year – and implemented through a process that involves almost no negotiation of the legal terms. Boilerplate rules these transactions. . . . These are transactions in which economic power is unevenly distributed; much dickering takes place over prices and product design; but everything else is packed into boilerplate.

Supra footnote 9 at 953-54.

Ross concluded his Expert Report with this overview:

> Development and launch of a new model vehicle is a complex process involving many variables that must be managed within a large bureaucracy. The process is made more complicated by external market pressure to provide the latest technology and styling and an unrelenting drive to meet an unyielding Job#1

> date. To successfully deal with the conflicting objectives that result from such a situation, engineers and buyers must be flexible, have an ability to work with inexact data and make decisions based on less than perfect information. Hence, sourcing decisions are often based on less exact information than would be available in a "perfect world," relying on targets, sometimes nebulous program assumptions, close working relationships with suppliers, integrity and trust between suppliers and Ford and past experience. While "industry outsiders" may view this process as "loose" or "undisciplined," it is an effective means for transforming a somewhat chaotic situation into a disciplined design, test and launch process that, in the end, produces a safe, affordable and reliable vehicle.

Exh. 1080 at p.19.

Based upon the record set forth above, the Special Master finds that there appears to be no genuine issue of material fact concerning the sales practices in the automobile industry during the relevant time period. As applied to supplier-designed specialty products, the sales practices had the following characteristics:

- The process often began with a personal meeting by the supplier with the customer's engineers and/or purchasing agent to describe and possibly demonstrate a sample or prototype, followed by a somewhat informal, seemingly incomplete, written quotation that included a brief description or drawing or reference to an existing customer's part number

or the vehicle program, a piece price and weight, anticipated annual production volume and estimated tooling lead time and costs.

- Some contract terms, though often omitted from early quotations, were generally known and assumed to apply, because they were included in the OEM's standard terms and conditions and long-term contract documentation and therefore "set in stone." These quotations were assumed by the OEMs to be sincere, well considered and realistic offers to deliver the product under the specified terms.

- Although the subsequent lengthy development process preceding production Job #1 might necessitate several design changes and associated pricing adjustments, the supplier and OEM customarily worked together under a relatively informal and flexible understanding once sourcing of a part had been determined. The supplier's initial quotation was often accepted as a binding quotation, subject to those possible future revisions. The delay in issuance of a formal purchase order until shortly before Job#1 was an administrative convenience for the buyer to avoid repetitive issuance of amended purchase orders during the 36-42-month lead time. The ultimately issued formal purchase order therefore was essentially a confirmation of what had been previously understood between the parties.

- The foregoing industry practices were generally representative of the sales practices between Tier 1 and Tier 2 suppliers, as well as between

OEMs and Tier 1 suppliers, during the time period relevant to the transactions considered here.

F. The Alleged Commercial Offers for Sale

Before analyzing the evidence and contentions of the parties concerning the first prong of *Pfaff* (*i.e.*, the commercial offer for sale), it is significant to recall that Judge Feikens previously concluded, on summary judgment, that the second prong had been satisfied by virtue of the inventions of claims 1, 8, 11 and 25 being "ready to be patented as of May 1992." 55 F. Supp.2d 702, 734. That finding was reinforced by subsequently introduced evidence warranting the conclusion that the claimed invention was ready for patenting before the June 6, 1994 critical date. See, *e.g.*, Amended Liability R & R at 61, 72-73 and 80-81.[11] Furthermore, it is also the law of the case that the assembly method that Lacks was offering to perform, and the composite wheels it was offering to sell in conjunction with a wheel-manufacturing partner before the critical date of June 6, 1994, corresponded with the invention of the Remaining Claims. Amended Liability R & R at 79. See also, Section II-C, *supra*.

As another preliminary point, the Special Master notes that one of the challenges that Lacks raises against each of the alleged commercial offer for sale transactions is that Defendants have not shown by

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[11] Still further corroborating evidence is found in Exhibit 1039 from the present proceedings, a March 4, 1994 Lacks SCORE submission to Chrysler stating that "CHROMTEC has passed all required durability tests conducted at Lacks Inc."

clear and convincing evidence that the assembly method contemplated by the quotation or proposal corresponded to the method of the Remaining Claims. As noted in Section II-C above, however, it is the law of the case that the assembly method Lacks was offering throughout the period covered by these transactions was the ready-for-patenting method of the Remaining Claims (Amended Liability R & R at 79). Defendants met their clear and convincing burden on that issue in the original trial. Significantly, in the present proceedings, Lacks has not come forward with any affirmative evidence that the offered assembly method was other than the patented method.

1. The Ford F-150 Wheel Offer

Defendants contend that, in June of 1993, Lacks offered to perform the method of the Remaining Claims of the '213 Patent to produce overlays and apply them to wheels for the Ford F-150 pick-up truck, and that such offer constituted a commercial offer for sale before the June 6, 1994 critical date.

As documentary support for this contention, Defendants principally rely on Exhibit 1002, one of a series of documents produced from the files of Ford Motor Company employee, Mr. Terry Eifert, following remand of this case. This two-page document is an internal Lacks memorandum, dated June 21, 1993, from Mr. Kent Van Timmeren (Lacks' cost estimator) to Mr. Lee Chase (Lacks' Product Development Manager and the patentee of the '213 patent). The first page provides an estimated piece price, tooling costs and information regarding the timing for obtaining the tooling for a PN-96 Sport Wheel Overlay (for the 1997 model year F-150 truck). It states that the price

includes assembly and that the cladding will be assembled to the wheel with RTV adhesive and five screws. The second page of this exhibit provides a breakdown of the tooling costs. Of significance to Defendants' contention are Eifert's handwritten notes appearing on that second page, further discussed below. Along with Exhibit 1002, Ford also produced from Eifert's file a preliminary design verification plan and report (Exh. 1003), a preliminary drawing of a PN 96 wheel, which states in the title block "Preliminary for quote" (Exh. 1004) and a series of Lacks' brochures (Exh. 1005).

In discovery before the original liability trial, Lacks produced the first page of Exhibit 1002, without the second page, and without Eifert's applied notes that appeared on his own file copy. Defendants explain that they did not originally pursue the subject of this apparently one-page document during the liability trial, because it appeared to be only an internal memorandum. Post-remand discovery, however, includes testimony of Eifert, Chase and others concerning this document and its disputed significance, as well as Lacks' own copy of the original two-page memorandum.

According to Eifert's deposition testimony, Ford was planning to release several optional wheel appearances for different vehicle packages, but in the first half of 1993 Ford's Chief Engineer asked him if there was a way that Ford could use a single high-volume wheel, but with multiple wheel cover options. That idea would permit tooling costs and wheel-testing to be substantially reduced (Eifert Dep. at 18-19).

Coincidentally, Ford's quest coincided with Lacks' vigorous promotion of its new wheel-cladding technology to Ford and others. As described in the Special Master's Amended Liability R & R following the original liability trial, Lacks' sales rep Czarnota had at least 15 meetings with Ford between August 31, 1992 and June 2, 1994, and Lacks presented a pair of "Technology Updates" in June of 1993, at which samples, drawings and printed materials were shown to "a couple of hundred" purchasing, engineering and sales personnel of Ford and Chrysler (Amended Liability R & R at 74-75).

When Eifert asked Czarnota if he had any suggestions responsive to the Chief Engineer's request, Czarnota informed him of Lacks' composite wheel. Following that initial conversation, Eifert and several dozen other Ford personnel attended Lacks' June 2-3, 1993 Technology Update and saw the composite wheel technology displays and literature. Eifert thought that might be a viable concept, and therefore asked Lacks to make a proposal for producing chrome-plated cladded wheels (Eifert Dep. at 15-16, 19-22). Lacks' response was the June 21, 1993 memorandum of Exhibit 1002 described above, along with the other documentation of Exhibits 1003-07 (*Id.* at 23-24; Exh. 1001, ¶9). Exhibit 1002 included a piece price of $17.29; a breakdown of tooling costs; and details regarding weight, mode of attachment ("five (5) screws and RTV adhesive"), packaging and production timeline measured from "completion of design."[12] Eifert

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[12] Eifert testified that this piece price included installation by Lacks and was independent of the quantity of wheels and of the particular wheel to which the cladding would be applied, and that

discussed these materials with Lacks personnel, acquiring additional information, as reflected in his contemporaneous handwritten comments on his file copy of Exhibit 1002 (Exh. 1001, ¶11; Dep. at 29). He testified that it was his understanding, consistent with the memorandum's reference to RTV adhesive, that Lacks' proposal contemplated use of a thin film of adhesive, with less than full-surface coverage, as specified by the method of the Remaining Claims (*Id.* at 33, 35, 38).

Eifert's signed statement commented on Lacks' June 21, 1993 memorandum:

> The June 21, 1993 Memorandum [Exh. 1002] *contained all of the essential elements necessary for me to have Ford's purchasing department prepare a purchase order for submission to Lacks*. Those necessary elements were the weight of the part, pricing for the part and tooling, and timing for delivery.
>
> * * *
>
> Based upon Ford's standard procedures, if we had decided to accept Lacks' proposal, the next step would have been to issue Lacks a purchase order for prototypes, based upon the information provided in the June 21, 1993 proposal.

Exh. 1001, ¶¶13-14 (emphasis added); see also, Eifert Dep. at 44-45, 81-82, 86-90.

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the production timeline referred to full-scale production rather than to prototype parts (*Id.* at 31, 34, 73, 92).

Similarly, Eifert testified that Exh. 1002 was an offer "that [Ford] could take Lacks up on," and that Ford would consider Lacks to be bound by the terms of the offer if Ford chose to accept it (42-43). Former Ford purchasing executive Ross stated that when such information is presented by a supplier, "in the absence of any disclaimer that it should not be considered binding, it is normally assumed by Ford Engineering and Purchasing that the supplier is committing to provide the product at the performance, cost and timing levels presented, if Ford chooses to accept their proposal." Continuing, "these informal commitments are regarded as binding as if they were part of a formal written contract." Ross Report, Exh. 1080, ¶¶9c, 10. Further agreeing with Eifert's testimony, Ross stated that Exh. 1002:

> . . . *had all the basic elements necessary for Ford Purchasing to award PN96 business to Lacks Industries and issue a purchase order*. These elements being; part price (including installation), tooling, part weight, expected volume, vehicle application, timing for tooling completion, production part sample approval and production availability. [Exhibits 1002 through 1007] *include all the basic data that normally would be considered necessary to issue a purchase order and confirm sourcing*. While information pertaining to FOB terms, payment terms, payment address, currency to be used, economic level of cost data and shipping location will also be needed to complete a formal purchase order, such data are generally assumed to already be known and are normally the same from purchase order to purchase

> order, based on ongoing dealings with the supplier.

Exh. 1080, pp.14-15 (emphasis added). See also, Matton Report, Exh. 1084, pp. 6-7. As cited in Section II-E above, Ross described how awards of business during the relevant period confirmed by less formal means than the traditional purchase order.

Lacks attack on the sufficiency of Exhibit 1002 as a commercial offer to sell, because of its omission of essential terms, is rebutted by the foregoing testimony of Eifert and Ross. The role of Lacks as a *process-performing* Tier 2 supplier is further justification for the absence of several of the otherwise expected terms of Lacks' Exhibit 1002 quotation. While the product that Ford would purchase would be the wheel with the overlay already assembled to it, Ford's purchase price would have built into it the cost of the wheel itself (manufactured by a Tier 1 supplier), plus the cost of the chrome-plated overlay (manufactured by Lacks), plus the cost of assembling the overlay to the wheel (performed by Lacks in accordance with the method of the Remaining Claims). Lacks would be the Tier 2 supplier. Lacks would receive a wheel from the Tier 1 supplier and assemble the Lacks-made overlay to it, and then either (1) return the assembly to the Tier 1 supplier or (2) ship the assembly directly to Ford. Either way, Lacks' quoted cost estimate of $17.29 would be built into the price paid by Ford, and it was "independent of the [specific] wheel." Eifert Dep. at 73-75. Ford would have to approve the design and performance of the assembled wheel, as well as Lacks' price for the overlay itself and the assembly operation, but because Lacks would be a Tier 2 supplier, its

overlay/assembly charges would be covered by the Tier 1 wheel manufacturer's total selling price to Ford.

Thus, that document does not include specifications, drawings, price or manufacturer of the unclad wheel itself, and quantity, each of which terms were "independent of" the patented method according to Eifert. Because Lacks was offering to perform its process on the identified Ford wheels, those particular omissions do not render the alleged commercial offer either incomplete or indefinite.

Lacks also points to other missing contractual terms, such as time and place of delivery and payment terms. Ross testimony quoted above (Exh. 1080, p.14) stated that such terms "are generally assumed to already be known and are normally the same from purchase order to purchase order, based on ongoing dealings with the supplier." Indeed, in view of the Long-Term Agreement between Ford and Lacks, Ross concluded that such terms had already been agreed upon. Ross Dep. at 39-40. See also, excerpts from the Long-Term Agreement and Matton Dep. at 52 and Schwartz Dep. at 33-34, quoted above in Section II-E.

Lacks asserts that the Exhibit 1002 document is merely an internal memo of Lacks from Van Timmeren to Chase, unsigned, containing no promissory undertakings, neither addressed to Ford nor its path into Eifert's possession adequately explained. Eifert stated that it (and the accompanying documents) were provided to him by Lacks in response to his request for a proposal for producing chrome-plated cladded wheels; that he discussed such documents with Lacks personnel, most likely with Mr. Czarnota, most likely within weeks of the documents' receipt, and applied

his handwritten notes as a result of that conversation (Exh. 1001, ¶¶9-11; Eifert Dep. at 23-29). None of this testimony by Eifert was directly contradicted by testimony offered by Lacks. Mr. Chase, Lacks' Product Development Manager at that time, testified that this kind of internal preliminary quote or cost estimate information would, as a matter of Lacks policy, have been given to Eifert by a Lacks sales person, such as it independent sales representative Mr. Czarnota, who was responsible for promoting Lacks' products at Ford. The purpose of submitting it to Ford engineering personnel was to show that the process and product look good enough to entice the OEM to pursue it further, the ultimate purpose being to sell such cladded wheels to Ford. Chase Dep. at 58-70. The asserted absence of promissory undertakings does not preclude Exhibit 1002 from constituting a commercial offer of sale, in view of the course of dealing and usage of trade in the automotive industry, as set forth in Section II-E above.

Lacks also challenges the Exhibit 1002 and associated documentation as insufficient to satisfy the requirements of a commercial offer for sale because they were not in accordance with Ford's formal contracting procedures and expressed standard terms. Among these were Ford's Early Sourcing/Target Agreement ("ESTA"), its Full Service Supplier Guide, and the previously mentioned Ford Long-Term Supply Agreement and attached standard Purchase Order Terms and Conditions. None of those formal documents followed the informal June 21, 1993 memo/quotation of Exh. 1002 and associated documents produced from Mr. Eifert's file. Lacks therefore contends that the documents relied upon by Defendants represent, at most, nothing more than

preliminary negotiations, and cannot satisfy the requirements of a commercial offer to sell because they clearly have neither the format nor content of the formal Ford documentation and procedures.

These contentions are without merit. Obviously, if Ford did not choose to go forward with Lacks' proposal, those responsive documents from Ford would not have been generated. But irrespective of Ford's response or lack of response, the dispositive issue under *Group One* is, could Ford have made Lacks' quote into a binding contract if it had chosen to express its acceptance either by a conventional acceptance or by the one of the standard Ford practices described above in Section II-E. In light of those practices, the course of dealing, the usage of trade and the Eifert and Ross testimony quoted above in this section, it is clear that such question must be answered in the affirmative See also, the conclusions of experts Ross and Manton at Exhibit 1080, ¶IV-9c and Exhibit 1084, pp.6-7, respectively.

It is noteworthy that the terms listed in the Exhibit 1002 memo are for production pieces, not for prototype parts. Eifert Dep. at 81-82. That fact, coupled with the level of detail and price precision found in that quotation, was indicative to OEM buyers that the supplier was making a legitimate and well-considered offer. See Ross Dep. at 42 and Schwartz Dep. at 17, quoted above in Section II-E.

Lacks also notes that, as confirmed by Eifert, Ford would not have been contracting with Lacks (who would have been the Tier 2 supplier), but would have instead contracted with the Tier 1 supplier with whom Lacks would have contracted to clad the Tier 1

supplier-manufactured wheel. But Eifert also testified that the Tier 1 supplier would work with Lacks to assure compatibility of the cladding with the wheel, and that it was acceptable that either the assembled wheel be sent by Lacks back to the Tier 1 supplier for shipment to Ford or that Lacks send it directly to Ford. Eifert Dep. at 73-74. The terms of Lacks' offer would necessarily have been included in the Tier 1/Tier 2 contractual arrangement relationship and been a precondition to the Tier 1 supplier's sales offer to Ford. Had the proposal been accepted by Ford, the price charged by Lacks according to the quotation would have been ultimately paid for by Ford as part of its payment to the Tier 1 supplier for the cladded wheel. See generally, Mendes' Statement, Exh. 1013, ¶16.

Lacks contends that the record does not clearly and convincingly establish that the assembly method contemplated by the Exh. 1002 and associated documents was to be in accordance with the Remaining Claims of the patent. This contention is without merit. As set forth above, the context of Exhibit 1002 includes the fact that Eifert and many other Ford personnel had, less than three weeks earlier, attended Lacks' Technology Update, where they saw Lacks' composite wheel technology displays and literature. Moreover, Eifert testified that it was his understanding, consistent with the memorandum's contemporaneous reference to RTV adhesive, that Lacks' proposal contemplated use of a thin film of adhesive, with less than full-surface coverage, as specified by the method of the Remaining Claims (Eifert Dep. at 33, 35, 38). While Lacks asserts that it was, as of the date of that documentation, still considering other assembly methods not covered by the

Remaining Claims, the present record, as detailed above, negates Lacks' challenge. Furthermore, the Special Master's findings from the original trial, adopted by the District Court and unchallenged and undisturbed on appeal to the Federal Circuit, stand as the law of the case, and concluded that:

> "Lacks' own contemporaneous documentation and trial testimony, summarized above, abundantly establish that (1) the assembly method that Lacks was offering to perform [during the pre-critical date period] corresponded precisely with the invention of the Remaining Claims, and (2) the overlays and composite wheels that it was offering to sell in conjunction with a wheel-manufacturing partner were to be made by the claimed method."

Amended Liability R & R at 79.

The Special Master concludes that the record establishes that there is no genuine issue of material fact that: Lacks' memorandum of June 21, 1993 (Exh. 1002) offered to sell and install wheel claddings in accordance with the method of the Remaining Claims, these to be installed on the PN-96 Sport Wheel for the 1997 Ford F-150 truck; that such sale was intended by Lacks to be for commercial rather than experimental purposes; that such memorandum was prepared and delivered to Ford under such circumstances, and in a form and degree of completeness, manifesting Lacks' willingness to be bound by its terms; and that, in accordance with the course of dealing and usage of trade, Ford could have made such terms into a binding contract by accepting them.

2. Motor Wheel's SCORE Proposals to Chrysler

The record includes written statements and deposition testimony from two key former Motor Wheel employees.[13] Nicholas Mendes was the Sales Manager of Automotive Products from 1983 to 1996, and had full responsibility for the Chrysler account. As such, he worked closely with Chrysler wheel engineers and buyers. David Haviland was Director of Marketing for all automotive products from 1986 to 1995. He was responsible for strategic planning, pricing, and supervision of product managers. With respect to the Lacks clad wheel, Haviland was in charge of dealing with Lacks on pricing and production issues, and Mendes was responsible for selling the product to Chrysler and presenting the SCORE proposal. Mendes Statement, Exh. 1013, ¶¶4, 13; Mendes Dep. at 8-12, 20, 24-25; Haviland Dep. at 15-17, 21-23.

(a) December 1992 Lacks Proposal for Jeep ZJ

Although Lacks wanted to submit its own SCORE proposal to Chrysler, it knew from its earlier promotional efforts at Chrysler that Chrysler insisted that the wheel manufacturer be the Tier 1 supplier, in contemplation of warranty issues. Chase and other Lacks representatives therefore approached Motor Wheel, a large supplier of chromed and non-chromed

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[13] It should be noted that Defendant Hayes Wheel purchased Motor Wheel at the end of 1995. Both Mendes and Haviland left the employ of Motor Wheel/Hayes in 1996. Mendes Dep. at 7-8, 46, 50; Haviland Dep. at 6, 15.

steel wheels to Chrysler, in the summer of 1992 with the proposal that Lacks' wheel cladding technology be combined with Motor Wheel's steel wheel and proposed to Chrysler for use on a particular Jeep model (Haviland Dep. at 17-19; Chase Dep. of 3/15/05 at 15-20). Once again it bears noting that, under the controlling law of the case, the invention of the Remaining Claims was, since May 1992, ready for patenting.

Chase explained to Motor Wheel that the chrome-plated cladding would be secured to the wheel by adhesives and screws, with the adhesive being applied in a pattern by a robot. That description was consistent with the subject matter of the Remaining Claims. The alternative use of a foam-type adhesive was not discussed. Haviland Dep. at 24-25.

A confidentiality agreement was signed by Motor Wheel on August 27, 1992. As supported by documents and testimony, there followed numerous meetings between Motor Wheel and Lacks to exchange information about the Jeep wheel and Lacks' cladding technology under the Remaining Claims of the '213 Patent. It was ultimately agreed that Motor Wheel, as the Tier 1 wheel supplier to Chrysler, would submit the SCORE proposal. For that purpose, Motor Wheel needed to learn from Lacks the cost of the overlay, the description and cost of the assembly equipment, the approximate amount and cost of the adhesive, packing methods for the part, freight costs, production rate and overhead costs. Haviland Dep. at 34-35. Haviland testified that he "would have to have a hard and fast quotation [from a Tier 2 vendor such as Lacks] before I went out onto a limb for my company." *Id.* at 58. Consistent with that testimony, notes of an October

29, 1992 Lacks/Motor Wheel meeting state that "Lee Chase [of Lacks] recommends a presentation at Motor Wheel to detail the assembly and adhesive technique to aid Motor Wheel in determining their pricing . . . [and] Motor Wheel needs [answers to adhesive questions] in order to prepare more specific pricing and to develop the SCORE proposal." Exh. 1021.

Motor Wheel technical personnel attended a presentation at Lacks' assembly facility on November 13, 1992. A three-page document including a "product flow description and diagram, machinery layout, equipment description and costs, and specific parts per hour, cycle time, adhesive volume and cost and screw costs was prepared and discussed. Exh. 1024; Haviland Dep at 39-40. According to a contemporaneous memo, Lacks considered that meeting to be successful, and Motor Wheel now needed to determine the selling price for cladding the existing Jeep XJ wheel (Exh. 1025). The plan was to then jointly prepare a SCORE proposal and decide whether it would be presented to Chrysler by Motor Wheel alone or jointly with Lacks.

Chase therefore asked Lacks' estimator Van Timmeren to prepare a quote for such composite wheel (Exh. 1027), and a December 7, 1992 written quote resulted (Exh. 1028). The quote identified the existing Jeep ZJ wheel, listed the piece price for the plated overlay and the hub cap, part weight and material, production rates, time until production tooling samples and tooling costs. As described in a December 9th memo from Chase to Haviland, Chase met with several Chrysler engineering, product planning and purchasing personnel on December 8th to show the chrome-plated composite mockup on the current ZJ

wheel, explain cost savings and features and determine Jeep's interest (Exh. 1029).

Lacks contends that there was no evidence that a proposal or quotation for cladding the Jeep ZJ wheel was ever submitted to Motor Wheel or Chrysler. It further contends that the Exhibit 1028 quotation (as well as the later Exhibit 1034 quotation discussed below) was a strictly internal document, addressed to Chase rather than to Motor Wheel or Chrysler. In view of the December 9th memo's summary, it appears likely that at least the substance of that December 7, 1992 quote was presented to Chrysler at the December 8th meeting, the purpose of which included "present cost savings," according to the December 9th memo (Exh. 1029). Although the Jeep ZJ cladded wheel concept was favorably received by Chrysler, Chrysler requested that Lacks and Motor Wheel redirect their effort to a proposal for a chrome-cladded wheel for Chrysler's T-300 Ram truck.

The Special Master considers the record insufficient to meet the required clear and convincing standard concerning actual communication of the quotation details to Chrysler, Motor Wheel or any potential customer. In the absence of that essential element of proof, the Special Master concludes that Defendants have failed to establish the first prong of the *Pfaff* test with respect to the December 1992 Lacks proposal for the Jeep ZJ.

(b) The February 1993 Motor Wheel/Lacks Score Proposal for T-300 Ram Truck

As previously stated, the December 9, 1992 memo (Exh. 1029) records Chrysler's request that Lacks and Motor Wheel prepare a proposal for a chrome-cladded T-300 Ram truck wheel. Motor Wheel was already Chrysler's supplier for both chrome-plated and unplated versions of the high-volume T-300 wheels (Exh. 1029; Haviland Dep. at 17-21, 49-50; Mendes Report, Exh. 1013, ¶¶6-7).

On December 15, 1992, Chase sent Haviland a timing chart for development of production tooling for the T-300 wheel cladding (Exh. 1031). The chart contemplated completion of that phase, including designing and building the overlay and durability testing, by February, 1994. Chase's covering letter indicated that the Chip Wu, the Chrysler T-300 engineer championing Lacks' Chromtec wheel, supported proceeding "straight to a production quality prototype tool" and that he had "no major engineering concerns with this concept" (*Ibid.*). Two days later, Chase asked Van Timmeren to prepare a quote for the T-300, both with and without assembly to the wheel with RTV adhesive and screws (Exh. 1032; Van Timmeren Dep. 13-17). On December 28, 1992, Chase sent Haviland a letter with an attached preliminary design drawing for the Chromtec cladding on Motor Wheel's existing steel T-300 wheel (Exh.1033). On January 18, 1993,[14] Van Timmeren prepared the requested T-300 quote, with and without wheel

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[14] The "1992 date on this quote appears to be a mistake.

assembly (Exh. 1034; Van Timmeren Dep. 18). The quote, indicated to be "preliminary" and "subject to change due to updated information," included piece price, base material price, tooling costs, volume and timing.

Van Timmeren testified that data such as contained in Exhibit 1034 would be used for a SCORE proposal, and that a SCORE proposal for Chromtec was given to Chrysler (Van Timmeren Dep. at 30). Chase did not recall whether this particular quote was given to Motor Wheel (Chase Dep. at 49). However, Haviland testified that he "would have to have a hard and fast quotation before I went out onto a limb for my company" (Haviland Dep. at 57-58). Mendes testified that:

> [I]t was a precondition for Motor Wheel to have all of the terms and conditions between Lacks and Motor Wheel, including the cost of the Motor Wheel steel wheels, the cost of the Lacks cladding, the cost of the tooling, the cost of assembling the cladding to the wheel, a production timetable for both prototypes and production wheels, the weight of the parts, and all of the other necessary details to have been agreed upon prior to the submission of the SCORE proposal.

Exhibit 1013, ¶16. Haviland testified that it was reasonable to assume that the total investment figure on the February 22, 1993 SCORE proposal of Exhibit 1037 came from Van Timmeren's Exhibit 1034 quote or another quote containing the same information (Haviland Dep. at 59-60). The proposal stated that it was "to provide the following T- 300 wheels with the

Lacks' Industries Inc. (Patented) plated 'overlay' replacing the current chrome plating." It shows a $7.00 per vehicle saving based on a projected annual vehicle volume as compared with the Motor Wheel's existing chrome-plated wheels for the T-300 truck.

The quoted testimony, together with the content of the quote itself and the content and timing of related contemporaneous documents between Motor Wheel, Lacks and Chrysler, warrant the conclusion that the data on Lacks' quotation of Exhibit 1034 was transmitted to Motor Wheel and used in Motor Wheel's SCORE proposal for the T-300 wheel with Lacks' Chromtec overlay. Haviland testified that he had no reason to doubt that the Exhibit 1037 SCORE proposal was submitted to Chrysler in late February, 1993 (Haviland Dep. at 63, 88).

On March 30, 1993, Motor Wheel personnel visited several Lacks facilities and viewed the actual process of making and plating the claddings and robot-attachment of claddings to a wheel, "pretty much a full process of what would simulate what we were being involved with" (Mendes Dep. at 63).

Lacks raises several challenges to the "commercial offer for sale" contentions of Defendants concerning this February 22, 1993 SCORE proposal for the T-300 Ram truck wheels for Chrysler, and the underlying January 18, 1993 Lacks quote to Motor Wheel (Exhs. 1037 and 1034, respectively). A first challenge is that SCORE proposals generally, and these proposals specifically, were merely concepts or ideas, no design work or testing having been done on clad T-300 wheels. Once again, the answer to that challenge is that the invention of the Remaining Claims is a

method of assembly, independent of any particular underlying wheel structure. That method has been already adjudicated to have been ready for patenting as of May 26, 1992, as previously set forth in Section II-C, *supra*..

A second Lacks challenge is that Chrysler's standard terms and conditions, like Ford's, specify that it is Chrysler's purchase order, issued late in the product development cycle, that constitutes the formal offer. Thus, the argument goes, neither Chrysler nor, in the case of this proposal, Motor Wheel, could have or would have accepted Lacks' proposal to thereby bind Lacks to its terms. That argument is without merit, for the reasons set forth above in Section II-E concerning course of dealing and usage of trade, and in Section II-F-1 concerning the Ford transaction.

A third Lacks challenge is that the quote is not an offer "to sell the component," and that it omits sufficient description of the component. As has been noted several times, the invention of the Remaining Claims is a method claim, and it is independent of the structure of the specific wheel. If Lacks offered to perform that method, even if no specific wheel were identified, and if the offer were sufficiently complete that Lacks would have been bound by any acceptance of it, that is all that is required under *Group One, Kollar* and *Scaltech*, as discussed above in Section II-B. Here, however, the quotation of Exhibit 1034 did identify "T-300 Wheel" as the subject. The context and other referenced documentation made it clear that such wheel was the existing wheel that Motor Wheel was currently making and selling to Chrysler for the T-300 Ram truck. And the SCORE proposal of Exhibit 1037, a Chrysler form, identifies the vehicle platform,

part number and part name. In both cases, there was adequate description of the product that Lacks was offering to assemble according to the method of the Remaining Claims.

Another Lacks challenge is that the Exhibit 1034 quote states that "this is a preliminary quote only and subject to change due to updated information," and the Exhibit 1037 SCORE proposal refers to a future "development and testing program," thereby rendering the document too tentative and premature to constitute a commercial offer of sale. These challenges are without merit. Lacks' caveat that the Exhibit 1034 quote was preliminary and subject to change added nothing to what was already a mutually understood standard practice, course of dealing and usage of trade. That is, it was mutually understood and expected that, if Lacks were selected as the supplier, there was a high probability of future product design revisions that could require changes in pricing or other terms of the quote. See Section II-E, *supra*. The same is true for Exhibit 1037's reference to future development and testing. Course of dealing and usage of trade dictate that these notations in Exhibits 1034 and 1037 negate the commercial offer of sale embodied therein. Moreover, with respect to contemplated future development and testing, the assembly method of the Remaining Claims was ready for patenting since May of 1992, and possible future structural changes in the wheel or cladding were therefore not relevant to the issue of whether there had been an offer to perform the claimed assembly method.

Exhibit 1037 does not contain a price; it only indicates the projected $7.00 per wheel cost saving, as required by the SCORE procedure and form. However,

the actual price per wheel could be directly computed from this per-wheel savings figure by subtracting the savings figure from the then current selling price of the existing full-face chrome-plated production wheel Motor Wheel was selling to Chrysler (Mendes Dep. at 26-27, 117, 119). And, with respect to the method of the Remaining Claims, the offer to perform that method for a stated price was inherently included in Exhibit 1037 by virtue of the underlying Exhibit 1034 quote and the surrounding circumstances. Furthermore, the UCC does not require that price terms be included to create a binding contract. *Linear Technology Corp v. Micrel, Inc.*, 275 F.3d 1040, 1052 (Fed. Cir. 2001), citing UCC §2-305, n.3.

With respect to Motor Wheel's SCORE proposal of Exhibit 1037, the Special Master notes that a commercial offer for sale under Section 102(b) need not be made by the patentee. *Abbott Labs v. Geneva Pharms, Inc.*, 182 F.3d 1315, 1318 (Fed. Cir. 1999).

Lacks also asserts that the Exhibit 1034 and 1037 proposals do not specifically require use of the method of the Remaining Claims. This issue is foreclosed to Lacks, as the law of the case establishes that the assembly method that Lacks was offering to perform for Ford, Motor Wheel, Chrysler and Accuride (the same transactions that were before the Court in the original liability trial) was the method of the Remaining Claims. See Section II-C, *supra*.

Experts Matton and Ross conclude that this SCORE proposal contained sufficient information to be considered a valid commercial offer to sell that could have been accepted by Chrysler and T-300 business

awarded based upon it. Exhibit 1084 at p.6; Exhibit 1080 at pp. 16-17.

The Special Master concludes that the record contains no genuine issue of material fact that: (1) Exhibit 1034 satisfies the *Group One* test for a commercial offer of sale by which Lacks was offering to perform for Motor Wheel the assembly method of the Remaining Claims in connection with the T-300 wheels that Motor Wheel would be supplying to Chrysler; and (2) Exhibit 1037, in conjunction with the underlying Exhibit 1034 quotation and the surrounding circumstances set forth above, satisfies the *Group One* test for a commercial offer for sale by which Motor Wheel was offering to supply T-300 wheels to Chrysler, which wheels would be assembled in accordance with the method of the Remaining Claims and pursuant to the terms of Exhibit 1034. Both transactions were intended by Lacks and Motor Wheel to be for commercial rather than experimental purposes. Both Exhibits 1034 and 1037 were delivered under such circumstances, and in a form and degree of completeness, manifesting Lacks' and Motor wheel's respective willingness to be bound by their terms. In accordance with the course of dealing and usage of trade in the automobile industry, Motor Wheel and Chrysler, respectively, could have made the terms of such offers binding by accepting them.

(c) The March 1994 Motor Wheel/Lacks SCORE Proposal for T-300 Ram Truck

Because Chrysler was interested in comparing the Lacks-clad Motor Wheel proposal with a competitive product involving a Thompson-clad wheel from Motor

Wheel, a year passed while Motor Wheel worked with Thompson (Mendes Dep. at 67-68, 111-112).

By March, 1994, Lacks had acquired the equipment and tooling to produce prototype cladded wheels, selected the glue and partial-coverage glue patterns and had robots in place (Mendes Dep. at 16-18, Exh. 1013, ¶11). Lacks and Motor Wheel had agreed upon the details of their joint SCORE proposal (*Ibid.*; Exh.1013, ¶12; Haviland Dep. at 74-75). The cladding was to be attached with a bead of RTV adhesive, rather than with a full-surface or foam adhesive (Mendes Dep. at 18; Van Timmeren Dep. at 43-44, 50).

A Chase letter of March 14, 1994 to Bob Kyostia (Lacks' sales rep at Cleary & Associates) relating to the T-300 SCORE proposal listed product and process improvements made since the earlier quote; production capacity and cycle time; tooling, equipment and robot costs; piece price for the plated cladding part and for adhesive and screws; a cross-sectional drawing of the cladded wheel; and a plant layout diagram for the wheel assembly steps (Exh. 1041). The letter stated that "while we have slightly changed the operation [since Kyostia's tour of November 1992] to accommodate tape you should use this layout and cost at this time." It further stated that "this quote assumes installation at Motor Wheels facility." Significantly, this letter includes the type of information that Motor Wheel required in a written quote from Lacks before a SCORE proposal could be submitted to Chrysler (Haviland Dep. at 71-72, 57; see also Mendes Exh. 1013, ¶16).

Two days later, Mendes sent a letter to the Chrysler wheel buyer enclosing SCORE proposals for

the T-300 wheel, one using the Motor Wheel/Thompson cladding and the other the Motor Wheel/Lacks cladding, based upon information received from those two cladding sources (Exh. 1040; Exh. 1013, ¶13; Mendes Dep. at 25-32). A copy of the Motor Wheel/Lacks SCORE proposal itself was not found during discovery, but Mendes testified that it was very similar to the Thompson proposal (Mendes Dep. at 31-32). The proposals stated the model year, anticipated volume, part numbers that were to be replaced by the cladded wheels, and dollar savings per wheel and annually (*Ibid.*). As explained in preceding Section II-F-2(b), the actual price per wheel could be directly computed from this per-wheel savings figure; the underlying quote of Exhibit 1041 contained the per piece price; and the UCC does not require price to be included to create a binding contract. Ultimately, however, Motor Wheel never received a purchase order for cladded wheels using either the Thompson or Lacks cladding proposals (Mendes Dep. at 87-89; Exh. 1013, ¶17).

Lacks challenges these March, 1994 transactions on a number of grounds. First, it asserts that there is no evidence that the terms presented in Exhibit 1041 were ever communicated to either Motor Wheel or Chrysler. Although it is true that the documentary record is incomplete in this regard, the documents that do survive, coupled with the circumstances and testimony summarized above, strongly support the conclusion that the quoted terms were communicated from Lacks to Motor Wheel, and were thereafter incorporated as part of the underlying basis for the joint SCORE proposal that was stated to be part of the attachments to Exhibit 1040 (see Mendes, Exh. 1013, ¶¶13, 14, 16)..

Lacks stresses that the Exhibit 1041 quotation states that it "assumes installation at Motor Wheel's facility" (see also, Haviland Dep. at 95-97). On that basis, Lacks argues that Lacks was not offering to sell a cladded wheel made in accordance with the Remaining Claims. The Special Master agrees, therefore, that a commercial offer of sale by Lacks to Motor Wheel did not occur. However, that fact does not negate a commercial offer of sale of the method of the Remaining Claims when Motor Wheel made its offer in the form of the joint SCORE proposal that was attached to the complete version of Exhibit 1040. Section 102(b) is not limited to offers of sale by the patentee. *Abbott Labs v. Geneva Pharms, Inc.*, 182 F.3d 1315, 1318 (Fed. Cir. 1999).

Lacks again raises the argument that there is no evidence that this offer was in accordance with the method of the Remaining Claims, specifically, as to the selective adhesive coverage feature. It goes so far as to assert that Lacks did not even consider selective application before late 1995 or 1996. That contention is directly contradicted by Lacks' own letter of March 22, 1994 from Chase to attorney Van Ophem, wherein Chase described how adhesive coverage had been reduced from the original 100%, with the conclusion that the necessary functions "can all be satisfied when as little as 25% of the cladding surface is bonded" (Exh. 1070). Also, it is contrary to findings that are the law of the case (Amended Liability R & R, p.81, and Section II-C, *supra*). See also, Mendes Dep. at 18. Furthermore, and more specific to this transaction, Van Timmeren, the Lacks estimator who determined the adhesive costs for the T-300 quotes, confirmed that the adhesive was a RTV adhesive applied in a bead, and testified that he never saw a drawing with the

RTV adhesive covering the entire wheel face (Van Timmeren Dep. at 43-44, 50).

Experts Matton and Ross concluded that this SCORE proposal constituted a commercial offer for sale. Exhibit 1084 at p.6; Exhibit 1080 at pp. 16-17.

The Special Master concludes that the record contains no genuine issue of material fact that: the MotorWheel/Lacks SCORE proposal that was attached to Exhibit 1040, in conjunction with Lacks' underlying Exhibit 1041 quotation and the surrounding circumstances set forth above, satisfies the *Group One* test for a commercial offer for sale by which Motor Wheel was offering to supply T-300 wheels to Chrysler, which wheels would be assembled in accordance with the method of the Remaining Claims and pursuant to the terms of Exhibit 1041; Lacks and Motor Wheel intended that transaction be for commercial rather than experimental purposes; both Exhibits 1040 and 1041 were delivered under such circumstances, and in a form and degree of completeness, manifesting Lacks' and Motor wheel's respective willingness to be bound by their terms; and, in accordance with the course of dealing and usage of trade in the automobile industry, Motor Wheel and Chrysler, respectively, could have made the terms of such offers binding by accepting them.

(d) Lacks' March 1994 Direct SCORE Proposal for T-300 Ram Truck

On March 4, 1994, almost simultaneously with Motor Wheel's SCORE submissions, Lacks directly submitted to Chrysler its own SCORE proposal for cladded T-300 wheels (Exh. 1039; Chase Dep. at

70-72). This proposal offered to "Replace current T-300 chrome full face wheels with Base Steel/Chromtec overlay made of HIPP 140."[15] The estimated price was $37.00 per wheel, with a cost saving of an estimated $20.00 per wheel. Significantly, this document states that "*CHROMTEC has passed all required durability tests conducted at Lacks Inc*," thus confirming Chase's own written chronology of the Chromtec project that stated that, as of October, 1993, "Satisfactorily completed all testing" (Exh. 58). As with the earlier SCORE proposals, this one indicated what the cost saving would be relative to the existing Motor Wheel-supplied T 300 wheel part numbers for specified annual volumes. Chase testified that the indicated cost savings per wheel would result from the use of "our [Chromtec] technology" (Chase Dep. at 74).

An internal Lacks memo from Chase to numerous Lacks employees, dated April 22, 1994 reports that:

> In general the market for CHROMTEC™ seems to be steaming up. Ford has three potential projects of interest and is sending a formal request for quote. The Chrysler Dodge Ram Truck SCORE proposal is running it's [sic] course through management. Chrysler believes the cost savings of this proposal could be as high as $30,000,000.00/year over their current plated steel wheel.

Exh. 1042.

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[15] The two mentioned wheels appear to be the chrome-plated and unplated ("base steel") versions of the same Motor Wheel-supplied wheel.

Lacks challenges this transaction on several grounds: (1)the SCORE proposal is be only a concept or idea; (2) it omits essential terms, such as piece price, breakdown of tooling costs, identification of the manufacturer of the wheel itself, and the size and newly assigned part number; (3) the cladded T-300 wheel had not been designed by Lacks; (4) Chrysler's purchasing procedures required many more steps to be completed before a purchase order could be issued; and (5) the proposal does not specify that the method of the Remaining Claims would be used for the required assembly.

While several of these challenges have been rejected by the Special Master in similar fact situations discussed above, (*e.g.*, absence of price and tooling costs and challenges 4 and 5), the Special Master agrees with Lacks that this proposal does not qualify as a commercial offer of sale.

It is not clear from the record whether this proposal contemplated applying Lacks' CHROMTEC technology (the method of the Remaining Claims) to an existing Motor Wheel base steel wheel for the T-300 or whether it was to be applied to a yet-to-be designed base steel wheel. There is evidence that the assembly method of the Remaining Claims (used for the closely-conforming portion of the wheel/cladding assembly) might need to be supplemented by a pre-fabricated structural foam bun for other portions that had a large gap between the wheel and cladding (Exhibit 1041). If so, that fact alone would not preclude the contemplated assembly method from being that of the Remaining Claims, providing that all of the steps of the claims were still included in the assembly process.

Nevertheless, the record makes it clear that Chrysler would not "source" the cladded wheel to Lacks as a Tier One supplier (for warranty reasons previously explained), and sales practices in the automobile industry as set forth in Section II-E above make it highly improbable that Chrysler would source the cladded wheel to Lacks (even as a Tier 2 supplier) without knowing who the wheel manufacturer would be or perhaps even the design of the wheel itself. Thus, on the present record, there is at best a genuine issue of material fact as to whether the proposal of Exhibit 1039 was an offer that had any chance of being accepted by Chrysler.

Based upon the foregoing, the Special Master concludes that Defendants have failed to establish by clear and convincing evidence that Lacks' March 4, 1994 SCORE proposal of Exhibit 1039 was a commercial offer of sale to Chrysler of the invention of the Remaining Claims.

3. Lacks' March 28, 1994 Proposal to Accuride for the F-350 Truck

The following excerpt from this Court' 2001 post-trial findings provides a starting point for an analysis of Lacks' sales efforts to and with wheel manufacturer Accuride Corporation:

> Lacks' pre-critical date commercialization efforts with wheel manufacturer Accuride in March, 1994 are described in the record. A February 18, 1994 memo from Anita Riopelle, an independent manufacturer's representative for Lacks, describes a February 17th meeting at Accuride where the "main focus" related to

Ford's urging Accuride to work with Lacks on Chromtec. A March 4, 1994 memo from Ms. Riopelle [present Exh. 1065] states that Accuride's top management, marketing and engineering had approved Chromtec "as the way to go to uplevel their wheels," and had requested a meeting to "lock down a design and establish a program." The memo recommended that "we should be prepared to do a full Chromtec presentation and have some design concepts available." A joint Accuride-Lacks program was seen as a way for Accuride to increase their market share at Ford. . . . .

A March 21, 1994 letter from Mr. Chase to Lacks' patent counsel [present Exh. 1069] requested that a confidential disclosure agreement be prepared for a meeting with Accuride, indicating that "they will be our customer on CHROMTEC wheels." Several additional Accuride meetings were held in March, including a March 29, 1994 Chromtec presentation and discussion of shared costs for programs involving several wheel programs for Ford, GM and Chrysler. One of the listed action items [in present Exh. 1071] was "Accuride to quote Chrysler Chromtec proposal – timing is 2 weeks." When asked at trial whether "the whole purpose of this meeting was to sell solely the Chromtech wheel," Ms. Riopelle answered affirmatively. Similarly, Mr. Chase testified that Lacks was bringing to the table the cladding technology that it had developed, and that if Accuride was going to be a tier one supplier of a Chromtech cladded wheel, they would have to buy that technology and the

> cladding from Lacks. Regarding the quote to Chrysler, Chase testified that the purpose was to see if the price was sufficiently interesting to Chrysler to justify Lacks continuing with the technology.
>
> By March, 1994, Lacks had produced about fifteen wheels with the selective adhesive pattern, and these were being used for validation and for demonstration to OEMs. By that time, twenty-two months had passed since the claimed invention was ready for patenting, and the critical date for Section 102(b) was still about three months in the future.

Amended Liability R & R at 76-77. It is also useful to recall that Chase himself had prepared a contemporaneous document entitled "Key Event Chronology *Chromtec*™ Wheel Development and Validation" (Trial Exh. 58) that included the entry, "October 1993 – Satisfactorily completed all testing." See also, Lacks Direct SCORE proposal of March 4, 1994, Exhibit 1039 ("CHROMTEC has passed all required durability tests conducted at Lacks Inc").

Post-remand discovery has now fleshed in further details of Lacks' commercialization efforts with Accuride. A March 10, 1994 memo from Riopelle to Lacks personnel stated that an Accuride visit had been scheduled for March 29th; that Accuride would send the latest drawings and other pertinent wheel information; and that "the 16" wheel is currently used on 350 and up series" (Exh. 1066). A March 11, 1994 memo from Chase to Van Timmeren (a Lacks estimator) requested

a quote for "Accuride 350 ton trucks"[16] (Exh. 1067; Chase Dep. at 92). Van Timmeren responded with a signed quote, dated March 28, 1994 (Exh. 1053; Chase Dep. at 92), including the piece price and quantity of the overlays, detailed tooling costs and acquisition schedule, manufacturing equipment layout and a drawing of the wheel/overlay/hubcap assembly. The quote specifies that the overlay is to be secured with RTV bead adhesive, rather than urethane foam (Chase Dep. at 87; Van Timmeren Dep. at 60-61). This assembly step is consistent with the findings from the earlier trial (controlling here by virtue of the law of the case doctrine) that the Chromtec method being offered during this time period conformed to the method of the Remaining Claims. Furthermore, the drawing attached to Exh. 1053 shows that the cladding closely conforms to the wheel surface, obviating the need to use a foam type to compensate for large spacing between the wheel and cladding. Consistent with that fact, Van Timmeren testified that the adhesive was to be applied in bead form (Dep. at 70).

Van Timmeren testified that when a quote (such as exemplified by Exhibit 1053) was written on Lacks letterhead, signed by him and not addressed to Chase, that indicated that it was prepared for delivery to a customer (Dep. at 60). Riopelle's minutes of the March

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[16] This reference to "350 ton trucks" appears to be an error, repeated in Van Timmeren's responsive quote of Exh. 1053. As identified in Exhs. 1066 and 1071, the "350" appears to be a reference to Ford's F-350 truck, one of several models in Ford's "F-Series" line of pick-up trucks. Thus, "350" seems to have been erroneously used in these documents to refer to the tonnage of the truck on which the 16" dual wheels were to be installed. See also, Matton Dep. at p. 82.

29, 1994 Accuride/Lacks meeting indicate that Chase made a "Chromtec presentation" and that "cost proposal submitted for 16" dual wheel (Exh. 1071)." In his 2005 deposition testimony, Chase was unable to recall whether this cost proposal was submitted to Accuride at the March 29, 1994 meeting, but could not think of any other cost proposal that might have been submitted at that time (Dep. at 93). Evidently, these meetings and quotations did not result in actual sales of Chromtec cladded wheels to Accuride (Chase Dep. at 96-98).

Lacks raises several challenges to the sufficiency of this signed quote to Accuride. It stresses that this document is labeled "Preliminary Quote" and includes the notation "pending finalized designs." It cites Van Timmeren's testimony that such notes are "put there to identify that this is only based on the most basic of information and that the numbers will be reviewed and possibly changed as the design and the manufacturing feasibility issues get flushed out." (Dep. at 71). Thus, Lacks contends the quote fails to show a present intention by Lacks to be bound by its terms. See also, Schwartz Report, Exh. 1085, p.7; Schwartz Dep. at 47-48; and Ekholm's Report, Exh. 1088 at comments on Accuride. This contention is not persuasive.

The stated reservations that the quote is preliminary and pending final design are implicit in any supplier's offer to supply a product or service to a customer who may thereafter make material changes in what it wants to purchase. That is certainly the practice in the automotive industry, where, as described above in Section II-E, initial supplier quotations are often accepted as binding, subject to

revision because of design or other material change in circumstance initiated by the customer.

Fisher-Price, a 2004 Federal Circuit decision relied upon by Lacks, directs that the alleged offer is to be evaluated "in view of the circumstances surrounding its making, taking into account such factors as the status of negotiations, the language of the documents, the terms of any previous inquiry, and the prior course of dealings between the parties." 2004 U.S. App. LEXIS, *supra*, at **10. Although the "preliminary quote" and "pending finalized designs" notations on the quote may accurately reflect the early stage of the negotiation on this contemplated joint Lacks/Accuride program, the remaining *Fisher-Price* factors strongly compel the conclusion that the Exhibit 1053 quotation was a serious, carefully considered offer that Lacks was willing to stand behind if Accuride accepted it, subject to the always-present possibility that it might have to be modified if the wheel specifications evolved as the project went forward.

As previously described, Accuride had previously approved the Lacks' Chromtec wheel-cladding technology (i.e., the method of the Remaining Claims) as the way to upgrade Accuride's currently produced wheels. From Lacks' point of view, the whole purpose of the meeting at which the quotation was presented to Accuride was to sell Chromtec-made cladded wheels. The quotation was prepared after receipt from Accuride of drawings and specifications for their 16" Ford F-350 wheels that were then in production, and the quotation included a detailed breakdown of tooling costs and acquisition schedule as well as a manufacturing equipment layout and a drawing of the wheel/cladding assembly.

As previously quoted, Ross testified on cross-examination that the degree of detail included in a quote was a factor he considered in determining whether it was a serious quote. He responded to cross-examination concerning Exhibit 1053, in particular, as follows:

> Q. (By Mr. Wicklund): It calls itself a preliminary quote, correct?
>
> A. Yes, it does.
>
> Q. And it's not, again, it's not addressed to anyone at Accuride or anyone else?
>
> A. No.
>
> Q. Or Ford?
>
> A. No. That appears to be how things are done at Lacks. And you see the tooling – part of my referencing it and some of the other material that's there was just to demonstrate the completeness of looking at the part and how ready are you to provide it. Is it just a concept that you're proposing, or have you thought it all the way through to supplying the components. And my opinion was with all this, from the number of plating racks you were going to need, how many you needed to buy so that you could plate a certain number, the gauges that were going to check it, the assembly fixtures, and so on, and you move on to the timing for the tooling, and you moved on to the, what we've seen before, this little assembly schematic

> that isn't really too meaningful, and then a sketch of how you're going to have the overlay sit on the wheel. At least if someone was trying to convince me I can make this for you and I know what I'm talking about and here's what I'd offer it to you for, that's how I would construe it if it were offered to me.

Ross Dep. at 125-26

Mr. Ross also testified on the subject of Lacks' contention that the use of words in a written quotation that suggest it was only a tentative quote negated an intention to be bound by the quote. The colloquy quoted below, though involving a different but similar transaction, is illuminating here for its additional insight into how seemingly incomplete or tentative quotations were regarded in the automobile industry. The testimony concerned a 1992 Lacks letter to a General Motors studio chief concerning a chrome plated cladding assembled to a wheel. The letter included a piece price quote of $14..08 each, based on volume of 300,000 pieces per year, and a tooling cost of $419,790.00 (Exh. 1044), and included the following additional remarks:

> I am writing to present our pricing proposal for the GMT 330 Wheel concept that we have discussed. Our pricing is an approximation based on the information we have received. Actual pricing may vary slightly once final design parameters are determined. Our pricing is as follows . . . . Please note that although Lacks Industries believes this concept to be viable in production, a prototype proveout

program would be required to validate the system.

During cross-examination on that quotation, Mr. Ross testified as follows:

A. I would say from my perspective of buying items, when I got something this exact that someone gave me and they called it a pricing proposal, I accepted it as an offer to buy if from them, particularly when it's to the nearest penny. I mean it isn't a guess.

* * * * *

Q. Well, you agree with me, again, when a seller makes a proposal, he's got to intend to be bound by it?

A. Yes.

Q. And when you use words like approximation, estimate, pending final design, that's pretty clear indication you're not intending to be bound necessarily by the exact proposal you're making, correct?

A. Yes and no. I'm sorry to be ambivalent. But when you make the proposal and you know that it isn't finally designed yet, you anticipate it's going to change. Does that mean you're going to change your $14.08 out of the clear blue; no. It means that you may do something to the product that will make that $14 or $14.15. It means that it isn't $30, it isn't 20, it's very close to that amount. And

as you make your changes, it's going to wiggle, and that's an accepted fact as to how we do business.

* * * * *

A. I think everybody understands there will be change.

* * * * *

A. But all the prices are estimates. You aren't making anything. All you can deal with is estimates. None is exact data. Not until you start making parts do you know what they cost you. You can guess at it, you estimate it. So I mean if you use an estimate, it is not to me a connotation that it's a guess or it's a nebulous speculation; it's as good as they can do right now to guess what the damn thing is going to cost. And that's, you know –

Q. Okay, fair enough.

Ross Dep. at 116-20 (emphasis added); see also Matton Dep. at 62-63, 80.

The Exhibit 1053 quotation, in particular, was one that Defendants' expert Ross considered to be one that the customer would consider binding under the surrounding circumstances (Report, Exh. 1080, ¶IV-9b; see also, *Id.* at ¶IV-10; see also, Matton Report, Exh. 1084, pp. 2, 7; Matton Dep. at 80).

Lacks also asserts that this quotation to Accuride omits "essential terms" that are required for it to

qualify as a commercial offer for sale: identification of the OEM for whom the wheel is destined; description or specifications for the wheel; reference to a drawing or other document that would supply such missing information; time and place of delivery; payment and freight terms; correlation of the wheel with the Remaining Claims of the patent. Ekholm Report, Exh. 1088 at comments on Accuride. These assertions are without merit.

The quotation identifies a specific wheel, the wheel for the Ford F-350 truck (see footnote 16, *supra*) that was already in production at Accuride; and the context of the quote, described above, makes it clear that the parties knew what product was involved. With regard to delivery, freight and other similar terms, the industry practices described above assure that such omissions, at this early stage of negotiations, would not have precluded the quotation from being considered a firm offer that could have been accepted. Finally, the correlation between the subject matter of the quote and the Remaining Claims has been abundantly established, as described above.

Lacks' challenges to the sufficiency of the Accuride quote are also undermined by a comparison with its later quote to Tredit Tire & Wheel Company (Exh. 1054). Lacks has contended that the July 26, 1995 Tredit quote (safely after the June 6, 1994 critical date) was its first commercial offer of sale of the claimed invention. Both are signed and on Lacks letterhead. Comparing the terms of these two one-page documents:

	Accuride Pre-Critical Date	Tredit Tire & Wheel Post-Critical Date
Wheel description	Chromtec Wheel Overlay Accuride 350 Ton Truck Wheels	16" Eight Bolt CHROMTEC Trailer Wheel
Assembly method	All parts are molded in HIPP-140; Overlays assembled to wheel with RTV and foam tape	(no description)
Piece price	Overlays for front and rear wheels, respectively: $14.11 and $21.66	$58.00
Tooling	$955,080.00	(no information)
Quantity	Front and rear, respectively, 100,000 and 200,000/year	Minimum 10,000 piece orders on any one [sic] the products
Delivery	Samples from production tools: 38 weeks	Minimum six week lead time

	Accuride Pre-Critical Date	Tredit Tire & Wheel Post-Critical Date
Terms	Preliminary quote; pending finalized designs	FOB Grand Rapids, MI; purchase order required to authorize Lacks to manufacture; payment net 30 days

Of further significance is the fact that, as noted above, the one-page Accuride quote was accompanied by a detailed tooling cost and acquisition schedule, a manufacturing equipment layout and a drawing of the wheel/overlay/hubcap assembly (Exh. 1053).

When Chase was asked whether he considered the quote to Tredit as an offer to sell the listed Chromtec wheels (notwithstanding the absence of identification of an OEM, drawings and specifications for the wheel and description of the assembly method), he answered, "sure" (Dep. of 3/15/05, p. 100). Van Timmeren testified that the document given to Tredit was a quotation for the Chromtec wheels "based on some information that must have been provided or we worked up" according to the same kind of process he used when Chase gave him an RFQ (Dep. of 3/15/05, pp. 64-65). Ross testified that the Tredit quotation was "a format that I would recognize as you seem to have covered all the data we need to know" (Ross Dep. at 129).

When Lacks' two experts, Messrs. Schwartz and Ekholm (both of whom are current Lacks employees), were asked if the Tredit quote was an offer that would

bind Lacks if accepted by Tredit, the only insufficiency in the document that they noted was the inadequate description of the wheel itself (Deps. of 7/27/05, pp. 43-44 and 22-25, respectively). But Ekholm acknowledged that the RFQ, which would come at the culmination of the development process, would be tied to a part number that would include a drawing, performance specifications, requirements, certifications and validations, which "could lead to something like this" (*Id.* at p.24). And in contrast to the Tredit quote, the Accuride quote does identify a particular Accuride wheel to which the Chromtec overlay was to be applied, an existing production wheel that Accuride was currently supplying to Ford and Chevrolet (Exh. 1065).

The Report of Defendants' expert Manton concludes that Lacks' quotation to Accuride contained sufficient detail to be turned into a binding contract by simple acceptance, assuming sufficient consideration (Exh. 1084, pp. 2, 7). Defendants' expert Ross stated in his Report that the written quotation to Accuride is typical of quotes submitted by suppliers in non-competitive situations, wherein the such quotation "will often be accepted as a binding quotation and a formal RFQ not issued until shortly before Job#1" (Exh. 1080, pp.7-8, emphasis added).

In addition to the other facts that have been previously noted as established by the law of the case, the Special Master concludes that the record contains no genuine issue of material fact that: Lacks' March 28, 1994 quote to Accuride (Exh. 1053) satisfies the *Group One* test for a commercial offer for sale by which Lacks was offering to clad Ford F-350 wheels in accordance with the method of the Remaining Claims;

Lacks intended that transaction to be for commercial rather than experimental purposes; the quote was delivered under such circumstances, and in a form and degree of completeness, manifesting Lacks' willingness to be bound by its terms; and, in accordance with the course of dealing and usage of trade in the automobile industry, Accuride could have made the terms of such offer binding by accepting them.

III. Summary

With respect to the parties' cross motions for summary judgment concerning the defense of patent invalidity of the Remaining Claims of the U.S. Patent No. 5,597,213 under 35 U.S.C.§102(b), as to which the law of the case has previously established that the claimed invention was ready for patenting before the June 6, 1994 critical date, the Special Master recommends that Defendants' motion for summary judgment of invalidity be GRANTED. The basis for this recommendation is that there is no genuine issue of material fact that a commercial offer for sale, as defined in *Group One*, has been proven by clear and convincing evidence as to each of the following transactions, any one of which would warrant grant of Defendants' motion:

(a) Lacks' offer to Ford on June 21, 1993, with respect to Ford F-150 wheels (Exhibit 1002);

(b) Lacks' offer to Motor Wheel on January 18, 1993, with respect to Chrysler T-300 wheels (Exhibit 1034);

(c) Motor Wheel/Lacks' offer to Chrysler on February 22, 1993, with respect to the

Chrysler T-300 wheels (Exhibits 1037 and 1034);

(d) Motor Wheel/Lacks' offer to Chrysler on March 16, 1994, with respect to the Chrysler T-300 wheels (the missing attachment to Exhibit 1040, and Exhibit 1041); and

(e) Lacks' offer to Accuride on March 28, 1994, with respect to the Ford F-350 wheels (Exhibit 1053).

The Special Master finds that Defendants have not, however, met their burden of proof as to either of the following two transactions:

(a) Lacks' offer to Chrysler or Motor Wheel on December 7, 1992, with respect to the Jeep ZJ wheels (Exhibits 1028 and 1029); and

(b) Lacks' offer to Motor Wheel on March 14, 1994, with respect to the Chrysler T-300 wheels (Exhibit 1041).

The Special Master further recommends that Plaintiff Lacks' motions for summary judgment be DENIED.

IV. Additional Considerations

The Special Master respectfully offers these additional thoughts to explain his opinion that the definition of "commercial offer for sale" created by the *Group One* decision is (1) irreconcilable with *Pfaff* and with the Federal Circuit's own post-*Pfaff* precedents (cited below), (2) destructive of the policy underlying

35 U.S.C.§102(b) and (3) unnecessarily difficult and costly to apply.

The patent statute provides that "[a] person shall be entitled to a patent unless (b) . . . the invention was . . . on sale in this country, more than one year prior to the date of the application for patent in the United States." 35 U.S.C. §102(b).

As the Supreme Court concluded in *Pfaff*, "[i]t is a condition upon an inventor's right to a patent that he shall not exploit his discovery competitively after it is ready for patenting; he must content himself with either secrecy or legal monopoly" (case citation omitted). 525 U.S. at 68. The Court quoted the guiding rule from its own 129 year-old *City of Elizabeth*[17] decision: "[a]ny attempt to use it for profit and not by way of experiment, for a longer period than [allowed by statute], would deprive the inventor of his right to a patent." *Id.* at 65. The Federal Circuit, both before and after *Pfaff*, has stressed that foremost among the policy considerations underlying Section 102(b) is "the policy of preventing inventors from exploiting the commercial value of their inventions while deferring the beginning of the statutory term [citation omitted]. To this end, the inventor is strictly held to the requirement that he file his patent application within one year of any attempt to commercialize the invention." *Ferag AG v. Quipp, Inc.*, 45 F.3d 1562, 1566 (Fed. Cir. 1995). After *Pfaff*, the Federal Circuit reiterated that policy: "The overriding concern of the on-sale bar is an inventor's attempt to

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[17] *City of Elizabeth v. American Nicholson Pavement Co.*, 97 U.S. 126 (1878)

commercialize his invention beyond the statutory term." *STX, LLC v. Brine*, 211 F.3rd 588, 590 (Fed. Cir. 2000).

These excerpts from the judicial opinions of both the Supreme Court and the Federal Circuit consistently identify the inventor's *attempt to competitively exploit* and *commercialize* the invention as the event that triggers the start of the one-year grace period: "exploit his discovery competitively" (*Pfaff*); "attempt to use it for profit" (*City of Elizabeth*); "exploiting the commercial value" (*Ferag*); "attempt to commercialize" (*Ferag* and *STX*); and "attempt to commercialize" (*STX*). The first prong of the *Pfaff* test for an on-sale bar, "the commercial offer for sale," must therefore be applied to the present facts in a manner that implements the policy codified in the Section 102b statutory bar, namely, prevention of commercial exploitation beyond the statutory term, once the invention is ready for patenting.

Furthermore, the Supreme Court observed that the statute identifies an interest "in providing inventors with a definite standard for determining when a patent application must be filed." 525 U.S. at 65. It noted that previously applied standards incorporating terms such as a "substantially complete" invention and the "totality of the circumstances" were "unnecessarily vague" and "undermine[d] the interest in certainty." *Id.* at 65-66.

In creating "ready for patenting" as the second prong of the new *Pfaff* test, the Court carefully defined

two ways that such condition could be satisfied.[18] Significantly, however, the Supreme Court did not explicitly define what was meant by the "commercial offer for sale" first prong of the *Pfaff* test.[19] It is the Special Master's firm conviction that the Supreme Court did not feel the need to define the first prong because that phrase already had a well-known and clear meaning in the patent law. Consider these observations in *Pfaff*:

> The law has long recognized the distinction between inventions put to *experimental* use and products sold *commercially*.

Id. at 64 (emphasis added).

> An inventor can both understand and control the timing of the first *commercial marketing* of his invention. The experimental use doctrine, for example, has not generated concerns about indefiniteness [footnote omitted], and we perceive no reason why unmanageable uncertainty should attend a rule that measures

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[18] " . . . by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention." 525 U.S. at 67.

[19] It should be noted that the focus of the Court was not on the first prong but rather on what became the second prong of the newly formed test. This focus is clear from the reason that the Court granted *certiorari*: "to determine whether the commercial marketing of a newly invented product may mark the beginning of the 1-year period even though the invention has not yet been reduced to practice." 525 U.S. at 57. See also, *Id.* at 60.

> the application of the on-sale bar of §102(b) against the date when an invention that is ready for patenting is *first marketed commercially*. In this case the acceptance of the purchase order prior to April 8, 1981 makes it clear that such an offer had been made, and there is no question *the sale was commercial rather than experimental in character.*

Id. at 67 (emphasis added).

"Commercial" and "experimental" commonly appear as pivotal terms in patent decisions adjudicating the Section 102(b) consequences of pre-critical date sales activity. It was therefore unremarkable that the Supreme Court used the "commercial offer for sale" phrase as it did. The Court was merely maintaining that long-standing distinction between an offer for sale that was for commercial purposes (and therefore potentially patent-barring) and one that was primarily for legitimate experimental purposes (and therefore not patent barring), while re-affirming *that* prong as one part of the traditional two-part test for an on-sale.

In *Group One*, the Federal Circuit further defined the "commercial offer for sale" prong of the *Pfaff* test: "[O]nly an offer which rises to the level of a commercial offer for sale, one which the other party could make into a binding contract by simple acceptance (assuming consideration), constitutes an offer for sale under §102(b)." 254 F.3d at 1048. Respectfully, the Special Master finds this rigid rule of *Group One* to be irreconcilable with the text and the spirit of *Pfaff*. Nothing in *Pfaff* hints at any intent on the part of the Supreme Court to introduce into the on-sale analysis either contract law principles or

issues of the potentially binding effect of an offer. As explained above, *Pfaff's* use of the qualifying term "*commercial,*" which appears to have been the Federal Circuit's sole rationale for its *Group One* definition, was used by the Supreme Court only to re-affirm the commercial/experimental dichotomy. Had the Supreme Court intended to dramatically change the law as to the first prong, it would be expected to have provided an amplified discussion of that prong as it did for the second prong.

The *Group One* test places uncontemplated emphasis on the completeness of the terms in a documented offer, or upon the customer's formal purchasing procedures, thereby diverting attention from *Pfaff's* and *STX's* re-affirmed focus on the patentee's purpose (or that of any other offering party) in the proposed transaction. *Group One's* redefinition of the first prong therefore undercuts rather than enhances the vital policy embodied in Section 102(b). Particularly detrimental to that policy will be the ease with which inventors can now manipulate and delay the start of the one-year grace period by simply omitting a key term from their written offer of sale, or perhaps by including on their offer document the notice that "The undersigned will not be bound by the terms of this document without further signed confirmation." Such calculated maneuvers could potentially avoid the otherwise potentially binding effect of their offer, and enable them to freely prolong their pre-filing commercial exploitation without jeopardy to their patent rights.

The present case illustrates other undesirable results of *Group One's* redefinition of "commercial offer for sale." The Federal Circuit's mandate, by requiring

the District Court to make findings as to sales practices in the automotive industry as the key to determining if a patent-barring offer for sale occurred, opens the door to industry-dependent criteria for application of Section 102(b). Even within the automotive industry, the record here reveals the complexity and variations in the formal purchasing procedures among the automobile manufacturers. An inventor may service or seek to sell to customers in several industries. Focusing on the customer's industry and purchasing procedures, rather than upon the inventor's purpose in soliciting a sale, therefore introduces complexity and uncertainty, contrary to the goals of *Pfaff* and to the policy underlying Section 102(b).

The Special Master also notes that the partial dissent in the Federal Circuit's ruling in the present case observed that the Court's previously stated goals of certainty and national uniformity in the on-sale analysis are "undermined by the majority's new accommodation to assertions of idiosyncratic industry patterns of dealing." 322 F.3d at 1352. Those goals were stated in *Group One*, 254 F.3d at 1041, and in *Linear Technology*, 275 F.3d at 1048.

Finally, the facts of this case illustrate the complexity, delay, uncertainty and cost, not only to the litigants, but also to inventors and their attorneys seeking to predict how the on-sale bar of Section 102(b) will be applied to their commercialization efforts and to ascertain the deadline for filing their patent applications.

The Special Master, in addition to making the foregoing proposed findings and conclusions pursuant

to the mandate from the Federal Circuit, therefore also records his conclusion that the supplemental record generated pursuant to the mandate reinforces the original Amended Liability Report and Recommendation, adopted by the District Court on April 23, 2001, that the invention of the Remaining Claims should be held invalid on the basis of the Special Master's understanding of *Pfaff's* two-prong test.

Dated: August 15, 2007

/s/Richard D. Grauer
Richard D. Grauer
Special Master

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APPENDIX D

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Nos. 01-1371, 01-1395, 01-1396

[Decided March 13, 2003]

LACKS INDUSTRIES, INC.,

Plaintiff-Appellant,

v.

MCKECHNIE VEHICLE COMPONENTS USA, INC. (doing business as Thompson International),

Defendant-Cross Appellant,

and

HAYES WHEEL INTERNATIONAL, INC. (now known as Hayes Lemmerz International, Inc.),

Defendant-Cross Appellant.

Before NEWMAN, MICHEL, and CLEVENGER, Circuit Judges.

MICHEL, Circuit Judge.

Plaintiff-appellant Lacks Industries, Inc. ("Lacks") appeals the rulings of the United States District Court for the Eastern District of Michigan: (1) granting summary judgment of noninfringement of method claims 1 and 2 of U.S. Patent No. 5,577,809 ("the '809 patent") and product claims 1, 2, 4-6, 8, 9, 11, 12, and 14-16 of U.S. Patent No. 5,636,906 ("the '906 patent"); (2) granting summary judgment of invalidity for obviousness of all the asserted claims of the '809 and '906 patents; (3) granting summary judgment of invalidity under § 102 of method claims 1, 3, and 8 of U.S. Patent No. 5,597,213 ("the '213 patent"); and (4) adopting a Special Master's findings after trial of invalidity of method claims 11-13, 20-22, and 24-25 of the '213 patent as a result of Lacks' commercial activities. Defendants-cross appellants Hayes Wheel International, Inc. ("Hayes") and McKechnie Vehicle Components USA, Inc. ("McKechnie") cross-appeal the court's decisions adopting the Special Master's findings after trial: (1) that claims 11-13, 20-22, and 24-25 of the '213 patent were not proven invalid under § 102(b) as a result of any offer to sell or public use by Hayes or McKechnie and (2) that defendants' product infringed claims 11-13, 20, and 24-25 of the '213 patent.

We affirm: (1) the grants of summary judgment of noninfringement of the '809 and '906 patents; (2) the grant of summary judgment of invalidity under § 102 of claims 1, 3, and 8 of the '213 patent; (3) the finding of infringement of claims 11-13, 20, and 24-25 of the '213 patent; and (4) the finding that claims 11-13, 20-22, and 24-25 of the '213 patent were not proven invalid as a result of the pre-critical date public use or sale by Hayes or McKechnie. Because the Special

Master applied an incorrect legal standard, we vacate and remand his finding that claims 11-13, 20-22, and 24-25 of the '213 patent were invalid because of Lacks' pre-critical date sales promotion activities. Because we need not reach a mere affirmative defense, and decline to do so, we vacate the district court's grant of summary judgment of invalidity for obviousness of the asserted claims of the '809 and '906 patents.

I.

The parties are all involved in the manufacture and sales of cladded wheels: automotive wheels that have a decorative cover[1] attached to their outer face (the side facing out from the automobile). The development of these wheels has been driven by cost and aesthetic considerations. Apparently, automobile buyers increasingly desire wheels with a shiny chrome look. Automobile manufacturers and suppliers want to meet this growing consumer demand without having to plate the entire wheel in chrome, an expensive process. As a result, inventors have developed chrome-plated cladding that covers only the visible portion of the wheel. This cladding is attached as a snug, plastic or metal skin over the outer wheel face, thus giving the wheel a chrome-like appearance at less cost than chrome plating of the entire wheel.

Lacks owns by assignment (from named inventor Lee Chase) the '809, '906, and '213 patents, all covering various aspects of cladded wheels. Chase filed his original patent application, No. 904,180, on June

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[1] The terms "decorative cover," "cladding," and "overlay" all mean the same thing.

25, 1992. Thereafter he filed divisional applications on June 7, 1995 and March 29, 1995 which led to the '809 patent and the '906 patent, respectively. Both patents share a common specification, though the '809 patent is drawn to a method for making cladded wheels and the '906 patent is drawn to the cladding as an apparatus. The '213 patent sprang from the same work as the '809 and '906 patents, but matured from its own June 6, 1995 application and has a disclosure different from that of the '809 and '906 patents. The '213 patent discloses a method and apparatus for the assembly of a cladded wheel through the use of a temporary securing and positioning means and the selective application of an adhesive. Lacks currently manufactures, assembles, and sells a cladded wheel product based on these patents.

Lacks sued Hayes and McKechnie for infringement of the '809, '906, and '213 patents by their manufacture and sale of cladded wheels based on McKechnie's U.S. Patent No. 5,368,370 ("the '370 patent"). After Lacks filed suit, many of the asserted claims in the '809 and '906 patents were withdrawn by stipulation. Infringement of the remaining claims of those two patents and the asserted claims of the '213 patent was first addressed by the district court when confronted with multiple motions for partial summary judgment. Lacks moved for summary judgment of infringement of '809 patent claim 1; '906 patent claims 1, 11, and 16; and '213 patent claims 25 and 40. Defendants cross-moved for summary judgment of noninfringement of '809 patent claims 1 and 2; '906 patent claims 1-2, 4-6, 8-9, 11-12, and 14-16; and '213 patent claims 1, 3, 7-9, 32, 35, and 37-40.

In addressing the '809 and '906 patents, the district court first construed the disputed limitations. Claim 1 of the '809 patent is representative of the asserted claims of both the '809 and '906 patents[2] (disputed claim language underlined):

> 1. A method for providing a decorative surface on a vehicle wheel having a web portion and a peripheral rim portion for mounting a vehicle tire, said peripheral rim portion defining *an axial peripheral lip* circumscribing said peripheral rim portion and structural means interconnecting said web portion and said peripheral rim portion, said web portion and said peripheral rim portion defining a *wheel face outer surface*, said method comprising the steps of:
>
> > forming a thin solid ornamental panel of uniform thickness having an interior and exterior surface, said thin solid formed ornamental panel being shaped to cover said entire wheel face outer surface and not cover said *axial peripheral lip* so as to mate to said wheel and substantially conform said exterior surface of said thin solid formed ornamental panel to adjacent contours of said wheel face outer surface of said wheel;

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[2] The parties have referred to the '809 and '906 patents together in their claim construction and literal infringement arguments, so we do not differentiate between them here either. The substance and language of both patents are similar and the patents share the same specification.

applying a decorative layer on said exterior surface of said thin solid formed ornamental panel;

applying an adhesive to one of said *wheel face outer surface* of said wheel and said interior surface of said thin solid formed ornamental panel; and

positioning said interior surface of said thin solid formed ornamental panel against said adhesive so as to adhere said thin solid formed ornamental panel to said *wheel face outer surface*;

whereby said positioning step locates said thin solid formed ornamental panel so as to be *substantially flush with adjacent portions* of said wheel face outer surface of said wheel such that *said decorative layer readily blends with said axial peripheral lip* circumscribing said peripheral rim portion so as to provide a visual impression that said decorative layer is substantially flush with said adjacent portions of said *wheel face outer surface* and thereby appears to constitute an integral portion of said wheel.

'809 patent, cols. 10-12. First, the court construed the claim term "axial peripheral lip" in both the '809 and '906 patents to mean "that uncovered surface of the composite wheel that starts at the edge of the cladding, goes up and over the top of the projecting rim lip, and ends where the outer side of the rim lip merges with the tire mounting surface of the wheel rim." *Lacks Indus., Inc. v. McKechnie Vehicle Components USA,*

Inc., 55 F.Supp.2d 702, 711 (E.D.Mich.1999). Second, the court construed "wheel face outer surface" in both the '809 and '906 patents to mean "the entire area of the wheel's exposed face that lies within the circumscribing boundary of the inner shoulder of the axial peripheral lip." *Id.* at 712. Third, in light of the undisputed structure of the accused product[3] and because the district court construed the claim terms such that the cladding must cover all of the outer face and none of the axial peripheral lip, the court granted summary judgment of noninfringement of the asserted claims of the '809 and '906 patents. *Id.* at 722-23.

The court also addressed several other issues. The court granted summary judgment of invalidity under § 102 of claims 1, 3, and 8 of the '213 patent because of the publication of Lacks' foreign patent applications corresponding to the '809 and '906 patents. *Id.* at 736-37. The court also granted summary judgment of invalidity for obviousness of the asserted claims of the '809 and '906 patents. *Id.* at 731. The court found that the combination of three prior art references, all drawn to decorative wheel coverings, provided a prima facie case of obviousness and that Lacks' evidence of secondary considerations failed to rebut that prima facie case. In addition, the court construed all relevant limitations in the asserted claims—both in addressing the motions for partial summary judgment and in a separate *Markman* order—and denied several other motions for partial summary judgment.

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[3] It is undisputed that the accused product contains cladding that covers all the outer face and most (if not all) of what corresponds to the axial peripheral lip disclosed in the patent.

By agreement of the parties, the remaining issues on infringement and validity were referred to a Special Master for trial. In an extensive (82-page) written opinion, the Special Master found claims 11-13, 20, and 24-25 of the '213 patent infringed and claims 11-13, 20-22, and 24-25 of the '213 patent invalid. As to infringement, the dispute centered on the limitation that an adhesive "permanently secure" the cladding to the wheel. The following excerpt from claim 11 of the '213 patent is representative of the relevant limitation: "Assembling said overlay to said outboard surface of said wheel with said curable adhesive so as to form said gap and *permanently secure said overlay to said wheel*, at least one void being present between said overlay and said outboard surface of said wheel." '213 patent, col. 15, lines 29-33 (emphasis added). The district court in its *Markman* order, construed the "permanently secure" limitation to mean "that the curable adhesive is *itself* capable of securing the overlay to the wheel during the normal useful life of the wheel." After trial, the Special Master found this limitation met and therefore found that Hayes and McKechnie literally infringed claims 11-13, 20, 24 and 25 of the '213 patent.

The Special Master next considered the validity of the '213 patent. First, the Special Master found that claims 11-13, 20-22, and 24-25 of the '213 patent were not invalid as a result of any prior offer for sale or public use by the defendants. The issue here was whether the cladded wheel product used publicly and offered for sale by defendants used only partial adhesive coverage to attach the cladding to the wheel and therefore embodied the claimed method. The Special Master found the defendants had not clearly and convincingly proven this fact because the

recollection testimony of three Hayes employees to that effect was insufficiently corroborated by documentary evidence. Second, the Special Master found that Lacks' *own* pre-critical date sales promotion activities were sufficiently commercial to raise the on-sale bar, thus invalidating these claims. The issue here was whether Lacks' activities constituted an offer for sale. The Special Master found that they did, relying on our decision in *RCA Corp. v. Data General Corp.*, 887 F.2d 1056, 12 USPQ2d 1449 (Fed.Cir.1989). The district court adopted the Special Master's findings in their entirety and entered judgment accordingly.

All rulings discussed heretofore have been timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

II.

We are presented here with a grant of summary judgment of noninfringement and a trial court's findings of infringement based on a Special Master's recommendations. We review *de novo* the grant of summary judgment. *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 149 F.3d 1309, 1315, 47 USPQ2d 1272, 1275 (Fed.Cir.1998). Summary judgment is appropriate if, drawing all factual inferences in favor of the non-movant, there is no genuine issue of material fact and the movant is entitled to judgment as a matter of law. Fed.R.Civ.P. 56(c); *Anderson v. Liberty Lobby, Inc.* 477 U.S. 242, 255, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). "The findings of a special master, to the extent that the court adopts them, shall be considered as the findings of the court" and we review them for clear error. Fed.R.Civ.P. 52(a).

Patent infringement analysis involves two steps. *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 988, 50 USPQ2d 1607, 1609 (Fed.Cir.1999). First, the court determines the scope and meaning of the asserted claims. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372-74, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). This claim construction is an issue of law and is reviewed without deference to the district court. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed.Cir.1998) (*en banc*). Second, the claims as construed by the court are compared to the allegedly infringing device. *Johnson*, 175 F.3d at 988, 50 USPQ2d at 1609. The determination as to whether the claims, as properly construed, read on the accused device presents an issue of fact that we review for clear error. *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 976, 52 USPQ2d 1109, 1111 (Fed.Cir.1999).

In engaging in the first step, claim construction, we begin with an examination of the intrinsic evidence, *i.e.*, the claims, the other portions of the specification, and the prosecution history (if in evidence). *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1339, 59 USPQ2d 1290, 1293-94 (Fed.Cir.2001). Courts may also review extrinsic evidence in construing a claim. *E.g.*, *Spectrum Int'l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378, 49 USPQ2d 1065, 1068 (Fed.Cir.1998). Additionally, dictionary definitions, although extrinsic, may be used to establish a claim term's ordinary meaning. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 n.6, 39 USPQ2d 1573, 1580 n.6 (Fed.Cir.1996).

A. Lacks' Appeal of Summary Judgment of Noninfringement of the Asserted Claims of the '809 and '906 Patents.

On appeal Lacks argues that the district court erred in its construction of the limitations "axial peripheral lip" and "wheel face outer surface" in the '809 and '906 patents. Focusing first on "axial peripheral lip," the district court construed the term to mean "that uncovered surface of the composite wheel that starts at the edge of the cladding, goes up and over the top of the projecting rim lip, and ends where the outer side of the rim lip merges with the tire mounting surface of the wheel rim." *Lacks*, 55 F.Supp. 2d at 711. According to Lacks, however, "axial peripheral lip" refers only to the projecting lip at the outermost edge of the wheel rim, as this is the plain meaning of the language. For support Lacks recites the dictionary definitions of "axial" ("around an axis"), "peripheral" ("of, relating to or forming a periphery," which is defined as "the perimeter of a circle"), and "lip" ("the edge or margin of a hollow vessel or cavity," or "an edge" or "margin"). *Webster's Third International Dictionary* (1997). These definitions, Lacks argues, render plain the meaning of "axial peripheral lip" as "the edge at the outermost perimeter circumscribing the rim."

Lacks next points to the prosecution history, noting that the limitation was added through amendment after the examiner rejected the claims as obvious in light of U.S. Patent No. 3,726,566 ("the Beith patent"). The Beith patent taught a decorative wheel cover extending over the outermost edge of the wheel rim. To avoid Beith, Lacks added the "axial peripheral lip" limitation and also added the language about the

panel blending with the lip to provide a visual impression that the decorative layer "appears to constitute an integral portion of said wheel." Lacks argues that one of ordinary skill in the art would realize that its amendment surrendered only enough subject matter to get around Beith. Therefore, Lacks contends, the "axial peripheral lip" limitation only prevents the decorative cover from extending over the outermost edge of the wheel rim.

Lacks' arguments fail to persuade us that its construction is correct. First, the dictionary definitions do not provide a plain meaning. As McKechnie points out, these definitions also fit the district court's construction. Second, Lacks' amendment to overcome the Beith patent, although providing some support for Lacks' construction, does not outweigh the support for the district court's construction present in the claim language and the specification. The district court observed that the limitation appears at three points in claim 1 of the '809 patent and concluded, from this context, that the axial peripheral lip "is not covered by the panel" and "touches the edge of the decorative layer in such a way that aesthetic blending occurs." *Lacks*, 55 F.Supp.2d at 710. The final point is key, because under Lacks' construction this "aesthetic blending" would have to occur between two things that are not adjacent: the outermost edge of the wheel rim and the edge of the cladding. While this is not impossible, it is unlikely and the district court's construction avoids such a problem.

The drawings also support the district court's construction. Figures 3 and 5 disclose the preferred embodiment of the '809 patent and explicitly identify

a "peripheral rim portion or rim 12" and an "axial peripheral lip 12a."

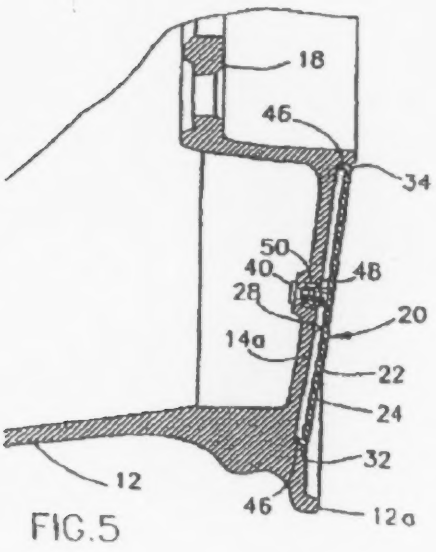


FIG.5

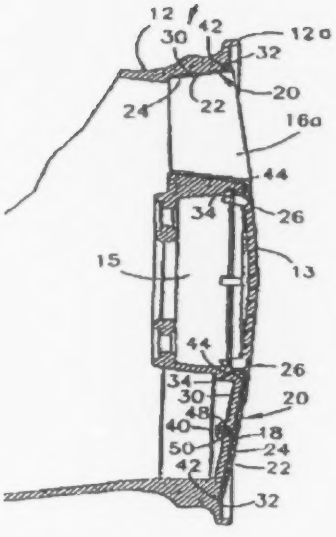


FIG.3

Here, the diagrams indicate two separate edges on the wheel rim, an interior one facing the center of the wheel, and an external one facing the outside. Notably, the pointer in figure 3 points to the outermost edge (supporting Lacks' construction), while the pointer in figure 5 points to the middle of the flat between the inside and outside edges. We do not think it reasonable to view one diagram as correct, but the other as erroneous. The better interpretation is that these references both refer to the larger structure the district court construed as being the "axial peripheral lip."

In sum, the weight of the intrinsic evidence supports the district court's construction and we

therefore uphold the district court's construction of "axial peripheral lip."

Lacks also challenges the court's construction of "wheel face outer surface" in the '809 and '906 patents. The district court construed the term to mean "the entire area of the wheel's exposed outer face that lies within the circumscribing boundary of the inner shoulder of the axial peripheral lip." *Id.* at 712. On appeal, Lacks argues that the dimensions of the cladding define the "wheel face outer surface," so long as the cladding covers some of the web and rim portions.[4] Again we are not persuaded.

Lacks' proposed construction is simply not consistent with the language of the claims. As the district court noted, the limitation first appears in the preamble of claim 1 of the '809 patent: "A method for providing a decorative surface on a composite vehicle wheel having a web portion and a peripheral rim portion for mounting a vehicle tire . . . *said web portion and said peripheral rim portion defining a wheel face outer surface.*" '809 patent, col. 10, lines 65-67, col. 11, lines 3-5 (emphasis added). The limitation also appears later in the claim: "said thin solid formed ornamental panel being shaped to cover said *entire wheel face outer surface and not cover said axial peripheral lip.*" *Id.* col. 11, lines 8-11. From this language the district court reasoned that "wheel face outer surface" must be the "area of the wheel's exposed

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[4] The web portion of the wheel is the central portion of the wheel composed of "spokes, spiders, or webs." '809 patent, col. 6, lines 64-66. The rim portion is that portion of the wheel that circumscribes the web portion.

outer face that lies within the circumscribing boundary of the inner shoulder of the axial peripheral lip." *Lacks*, 55 F.Supp.2d at 712.

Given this clear language, Lacks' arguments to the contrary are not persuasive. The district court's construction is the only reading consistent with the plain language of the claim limitation and we therefore uphold the district court's construction of "wheel face outer surface."

This brings us to the second step in the infringement analysis, the comparison of the claims as construed to the allegedly infringing product. Because we uphold the court's claim construction, we also affirm the court's grant of summary judgment because noninfringement follows inexorably in this case from the claim construction. *Id.* at 722. This is because it is undisputed that the accused product covers at least part of the axial peripheral lip as construed and therefore cannot satisfy the "not cover said axial peripheral lip" limitation in the asserted claims. *Id.* at 722-23.

B. Hayes' and McKechnie's Cross-Appeal of the Finding of Infringement of the '213 Patent.

The district court adopted the Special Master's post-trial finding that Hayes and McKechnie literally infringed claims 11-13, 20, 24, and 25. The sole infringement issue on the cross-appeal, as below, is whether the defendants' product satisfied the limitation that the adhesive "permanently secure" the cladding to the wheel. The district court construed "permanently secure" to mean that the "adhesive is *itself* capable of securing the overlay to the wheel

during the normal useful life of the wheel." (emphasis in original). After hearing testimony about various industry standards and tests, the Special Master found this limitation met.

In their cross-appeal, Hayes and McKechnie argue the Special Master erred in finding infringement. They first contend that in adopting his standard, he impermissibly re-construed the limitation, reading out the requirement that the adhesive secure the cladding by "itself." The Special Master found that the limitation would be met if the adhesive: "(1) satisfies the specifications set forth on the Hayes engineering drawing for the accused F-150 wheel and (2) retains sufficient retentive strength (without reliance on the mechanical locking system) to secure the overlay throughout Ford's vehicle durability testing, but with a modified upper temperature limit." Defendants-cross appellants argue the Special Master erred because both the specification and test he adopts as his standard accounted for the presence of their mechanical lock.

Their second set of arguments challenge the evidentiary support of the Special Master's findings regarding what test conditions and results warrant an inference that the "permanently secure" limitation is met. They assert that Lacks' evidence is insufficient to support a finding of infringement because (1) Lacks only did certain laboratory tests of the accused device, without testing the adhesive under road conditions, and (2) they never tested the device without the mechanical lock so that the adhesive was the only thing holding it together. If the Special Master had properly addressed the above deficiencies, defendants-cross appellants maintain, it would have been clear

that the adhesive in the accused product cannot hold up for the life of the wheel under the intense heat and stress conditions of normal use.

Upon review, we cannot say that the Special Master's findings were clearly erroneous. First, we reject the argument that he reconstrued the "permanently secured" limitation, reading out the requirement that the adhesive *itself* secure the cladding. A far more accurate reading of the Special Master's analysis is that he simply evaluated evidence of the conditions a wheel would encounter during its normal useful life and created a benchmark for measuring whether those conditions were met by "constructing a mosaic of numerous laboratory and vehicle tests and related trial testimony." Such an amalgamation of different tests and specifications was necessary because "no separate specifications existed for securing overlays . . . to wheels." He chose the particular specification and test in creating his standard because he found that they represented the conditions cladded wheels would encounter in their normal use, not because they were designed to test whether an adhesive could itself secure a cladding to a wheel over its useful life. At all times he explicitly recited his task as determining whether the adhesive "itself" was capable of "permanently securing" the cladding for the life of the wheel. We accept that he did so.

Second, there was evidence to support the infringement findings that these conditions were satisfied by the accused product. There was evidence of the specifics of each individual test in the form of expert and other testimony and documents. First, the shear (coupon) tests on two small, flat panels joined by

the adhesive at issue showed "acceptable adhesion was obtained throughout all test conditions." Second was Lacks' rotary and radial fatigue and impact testing of new, unused Hayes wheels with the mechanical lock disabled, after which the testers were "unable to remove the cladding by prying with a small tool." Third, and most persuasive were McKechnie's 1998 tests of wheels that "had been subjected to a durability cycle that included several adverse environmental conditions." In the subsequent pull off testing, nearly 800 pounds of force was required to remove the cladding from the wheel utilizing only the mechanical lock, whereas 1500 pounds of force was required to remove the cladding from the wheel using only the adhesive. The Special Master found this to be especially relevant, given McKechnie's assertions that the mechanical lock itself was the sole cause of permanent retention of their cladding to the wheels.

In sum, because we reject Hayes' and McKechnie's argument that the Special Master reconstrued the "permanently secured" limitation and because there was evidence to support the Special Master's finding of infringement of the '213 patent, we affirm the court's rulings as not clearly erroneous.

III.

The district court granted summary judgment of both invalidity for obviousness of the asserted claims of the '809 and '906 patents and invalidity for anticipation of claims 1, 3, and 8 of the '213 patent. After a bench trial, a Special Master found claims 11-13, 20-22, and 24-25 invalid under the on-sale bar as a result of Lacks' pre-critical date sales promotion

activities and found that no bar resulted from the pre-critical date activities of Hayes and McKechnie.

As a threshold matter, we note that we do not reach the validity issues pertaining to the '809 or '906 patents because we have affirmed the trial court's grant of summary judgment of non-infringement and because invalidity was raised below merely as an affirmative defense to infringement. *See Cardinal Chem. Co. v. Morton Int'l, Inc.*, 508 U.S. 83, 93, 102, 113 S.Ct. 1967, 124 L.Ed.2d 1 (1993) (holding that a court's affirmance of a finding of non-infringement is not per se a sufficient reason for vacating a declaratory judgment holding the patent invalid, but noting "an unnecessary ruling on an affirmative defense is not the same as the necessary resolution of a counterclaim for a declaratory judgment"); *Hill-Rom Co., Inc. v. Kinetic Concepts, Inc.*, 209 F.3d 1337, 1344, 54 USPQ2d 1437, 1442 (Fed.Cir.2000) (holding that it need not reach or vacate the district court's finding that a patent was not invalid where it had affirmed the trial court's judgment of non-infringement). We address the remaining issues in turn.

A. Lacks' Appeal of Summary Judgment of Invalidity of Claims 1, 3, and 8 of the '213 Patent under Section 102.

The district court granted summary judgment of invalidity of claims 1, 3, and 8 of the '213 patent under § 102 because of the publication of Lacks' foreign patent applications corresponding to the '809 and '906 patents. *Lacks*, 55 F.Supp.2d at 736-37. Although referencing § 102, the district court did not specify whether its analysis was under subsection (a) or (b). While the court referred to its analysis simply as

"anticipation," the correct reading of the court's opinion is that it was referring to a § 102(b) statutory bar. For example, the court noted that "the foreign patents were published more than one year before the filing of the application for the '213 patent," *Lacks*, 55 F.Supp.2d at 736 n.18, an inquiry that is only relevant under § 102(b). In addition, "Lacks [did] not dispute that the foreign patents are prior art" before the district court, *Lacks*, 55 F.Supp.2d at 736, nor does it on appeal. However, it is "well-settled" law that an inventor's own disclosure "will not anticipate his later invention unless that prior work is such as to constitute a statutory bar under Section 102(b)." Donald S. Chisum, 1 *Chisum On Patents* § 3.08[2][a] (1999). We therefore conclude that the district court performed its analysis under § 102(b).

On appeal, Lacks argues only that the foreign applications neither disclose nor teach the "temporary positioning and securing" means for centrally locating the cladding relative to the rim and for securing the cladding for a sufficient time to allow the adhesive to cure. We do not agree.

The specification of the '809 and '906 patents expressly discloses these two elements.[5] The specification discloses the use of temporary positioning and securing means, including "bosses" and adhesive, to maintain the decorative cladding in a central location until the claimed permanent adhesive can be applied. '809 patent, col. 7, lines 29-41. As the specification notes, this permits the cladding to be

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[5] Lacks concedes that the foreign specification is identical to its domestic counterpart.

"accurately positioned on the wheel disk." *Id.* col. 7, lines 43-44. The specification further discloses the use of an adhesive to "permanently" adhere the cladding to the wheel surface. *Id.* col. 8, lines 5-6. These two disclosures either contain or at least suggest a "permanent" configuration for adhesively securing the cladding. *Id.* col. 8, lines 5-8. Therefore, we find no reversible error in the district court's grant of summary judgment of invalidity of claims 1, 3, and 8 of the '213 patent. Accordingly, we affirm that grant.

B. On-sale Bar of the Remaining Claims of the '213 Patent.

Under § 102(b) "[a] person shall be entitled to a patent unless . . . the invention was . . . on sale in this country, more than one year prior to the date of the application for patent in the United States . . . ." 35 U.S.C. § 102(b) (2000). A two-prong test governs the application of the on-sale bar: "First, the product must be the subject of a commercial offer for sale. . . . Second, the invention must be ready for patenting." *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 67, 119 S.Ct. 304, 142 L.Ed.2d 261 (1998). A § 102(b) determination is a conclusion of law based on underlying findings of fact. *Linear Tech. Corp. v. Micrel, Inc.*, 275 F.3d 1040, 1047, 61 USPQ2d 1225, 1229 (Fed.Cir.2001). As such, we review the ultimate determination *de novo*, and the underlying findings for clear error. *Id.*

1. Lacks' Appeal of the Finding of On-sale Bar As a Result of Its Own Activities.

The Special Master found that Lacks' pre-critical date sales promotion activities created an on-sale bar to claims 11-13, 20-22, and 24-25 of the '213 patent. He

based his finding on Lacks' extensive commercial activity more than one year before it filed its patent application. On appeal, Lacks challenges the finding. The crux of the dispute is whether the Special Master applied the proper legal standard to the first prong of the test: whether there was a "commercial offer for sale." We hold that he did not.

The standard for determining what constitutes an offer to sell sufficient to raise the on-sale bar had been subject to some confusion and change. For many years this court applied a flexible, "totality of circumstances" standard in its application of the on-sale bar. *See, e.g.*, *Envirotech Corp. v. Westech Eng'g Inc.*, 904 F.2d 1571, 1574, 15 USPQ2d 1230, 1232 (Fed.Cir.1990). Under that test "no single finding or conclusion of law [was] a *sine qua non*" to a holding that the statutory bar arose. *Id.* As to what constituted an offer for sale, cases had held that a "definite offer for sale" was required. *Id.* at 1575, 15 USPQ2d at 1232. In interpreting that requirement at least one opinion noted that "this requirement may be met by a patentee's commercial activity which does not rise to the level of a formal 'offer' under contract law principles." *RCA Corp.*, 887 F.2d at 1062, 12 USPQ2d at 1454. Things began to change when the Supreme Court swept away the "totality of circumstances" test in *Pfaff*, 525 U.S. at 67, 119 S.Ct. 304, replacing it with the two-prong test recited above. The Court in *Pfaff* did not, however, expound upon its requirement of a "commercial offer for sale," as that was not an issue in the case.

After the Special Master issued his findings and conclusions, we clarified this standard in *Group One, Limited v. Hallmark Cards*, 254 F.3d 1041, 59 USPQ2d 1121 (Fed.Cir.2001). In *Group One* we held

that "only an offer which rises to the level of a commercial offer for sale, one which the other party could make into a binding contract by simple acceptance (assuming consideration), constitutes an offer for sale under § 102(b)." *Id.* at 1048, 59 USPQ2d at 1126. In so holding, we noted that Federal Circuit law, not state contract law, would control and that we would look to the Uniform Commercial Code ("UCC") for guidance as to whether a particular communication rose to the level of a "commercial offer for sale." *Id.* at 1047, 59 USPQ2d at 1126; *accord Linear Tech.*, 275 F.3d at 1048, 61 USPQ2d at 1229-30 (following *Group One* and reversing the district court's invalidation under § 102(b) because the alleged activities did not constitute a contractual offer for sale under the UCC).

Turning now to the Special Master's analysis, it is clear that he performed his analysis under the wrong standard. The Special Master relied on his findings that Lacks "(1) vigorously solicited wheel manufacturers to whom Lacks could sell overlays and on whose wheels Lacks could perform its overlay-bonding method, and (2) vigorously solicited [original equipment manufacturers] to specify and purchase wheels clad by the later-patented method." For example, the Special Master relied on a Lacks eleven-page "Wheel Meeting Agenda" dated May 1993 that included a description of the product and its benefits, a plan to "validate assemblies following a plan jointly developed with [the] customer," and the approximate cost-savings as a result of achieving a chrome finish using Lacks' product. Importantly, however, the Special Master did not find this activity, nor any other of Lacks' activities, to be a commercial offer for sale as defined by contract law. Rather, he proceeded at length on the theory that "contract law principles do

not govern § 102(b) issues." Particularly telling is his statement that:

> Lacks is correct to the extent that there is no evidence of an offer to sell a particular cladded wheel for a specified vehicle at a specific price. But the *RCA* definition of a "definite offer" does not require that specificity: "The requirement of a definite offer excludes merely indefinite or nebulous discussion about a possible sale. While *this requirement may be met by a patentee's commercial activity which does not rise to the level of a formal offer under contract law principles*, a definite offer in the contract sense clearly meets this requirement."

(emphasis added). As noted above, we rejected the *RCA* non-contract approach in *Group One*, 254 F.3d at 1048, 59 USPQ2d at 1125. As the Special Master explicitly relied on a standard requiring something less than "a formal offer under contract law principles," we must hold he erred by applying the wrong legal standard in determining whether there was an offer for sale under § 102(b).

Defendants-cross appellants urge that any such error was harmless because the factors that inform whether there was a contractual offer under the UCC include course of dealing and evidence of the practice in the industry. U.C.C. § 1-205. According to the defendants, Lacks' activities amounted to a contractual offer for sale because "that is how business is done in the automotive industry." We, however, cannot so conclude as a matter of law on the record before us. Although it contains some evidence about how sales are made in the automotive industry, we

cannot tell what the fact-finder would have found had he applied the correct legal standard. In fact, the only evidence of industry practice defendants point out to us on appeal is their unsupported description of their own sales experience with Ford. As a result, we vacate the Special Master's finding of invalidity and remand for further consideration. On remand the district court (or Special Master) may need to take additional evidence on the practice in the industry to determine if the activities by Lacks rise to an offer for sale under the UCC. It may also be possible to make new fact-findings based on the existing record. We leave this determination to the court's sound discretion.

2. Cross-Appeal Asserting Public Use and On-sale Bars by Hayes' and McKechnie's Activities.

The Special Master found that the activities of Hayes and McKechnie did not give rise to a § 102(b) bar. The Special Master determined, and Lacks does not challenge, that the "the Defendants had some kind of adhesively-bonded, chrome-cladded F-150 wheel assembly on sale to, and in public use by, Ford prior to the June 6, 1994 critical date." Nevertheless, the Special Master decided against applying the statutory bar, because he found insufficiently corroborated the testimony that the manufacture of defendants' device used the entire *claimed* method of claims 11-13, 20-22, and 24-25 of the '213 patent. Specifically, the Special Master found that Hayes and McKechnie had not clearly and convincingly proven that their device had at least one void between the overlay and the outboard surface (as required by independent claim 11, upon which claims 12-13, 20-22, and 24 depend) and wherein that void trapped air between the overlay and

the wheel (as required by independent claim 25)—*i.e.*, whether the accused device used partial, rather than full, adhesive coverage in securing the cladding.

On appeal, Hayes and McKechnie argue that the Special Master committed legal errors: (1) by requiring each document offered to corroborate the oral testimony to independently provide a detailed description as to the extent and pattern of adhesive coverage; and (2) refusing to allow the oral testimony of one witness to corroborate that of another. Once again, even though the ultimate question under § 102(b) may be one of law, we review the underlying factual determinations for clear error. *Linear Tech.*, 275 F.3d at 1048, 61 USPQ2d at 1229. Because we conclude that the Special Master did not commit legal error in evaluating corroboration and because he did not clearly err in finding the clear and convincing standard not met, we affirm.

The requirement for corroboration of oral testimony occurs most often in the context of priority disputes, wherein we have held an inventor's testimony, standing alone, cannot support a claim of derivation (§ 102(f)) or priority (§ 102(g)). *See, e.g.*, *Price v. Symsek*, 988 F.2d 1187, 26 USPQ2d 1031 (Fed.Cir. 1993). Corroboration is also required where, as here, the testimony is from an accused infringer concerning the sale (or offer to sell) or public use of an invention more than one year before the filing of a patent. *Finnigan Corp. v. ITC*, 180 F.3d 1354, 1366, 51 USPQ2d 1001, 1010 (Fed.Cir.1999). Whether the asserted identity of the product with the claimed invention has been sufficiently corroborated, either by documentary or testimonial evidence, is generally measured under a "rule of reason" standard. *Woodland*

Trust v. Flowertree Nursery, Inc., 148 F.3d 1368, 1371, 47 USPQ2d 1363, 1366 (Fed.Cir.1998). Under this analysis, "an evaluation of all pertinent evidence must be made so that a sound determination of the credibility of [the evidence] may be reached." *Price*, 988 F.2d at 1195, 26 USPQ2d at 1037. In evaluating such evidence, we use the factors enumerated in *Woodland Trust*:

> (1) the relationship between the corroborating witness and the alleged prior user, (2) the time period between the event and trial, (3) the interest of the corroborating witness in the subject matter in suit, (4) contradiction or impeachment of the witness' testimony, (5) the extent and details of the corroborating testimony, (6) the witness' familiarity with the subject matter of the patented invention and the prior use, (7) probability that a prior use could occur considering the state of the art at the time, and (8) impact of the invention on the industry, and the commercial value of its practice.

148 F.3d at 1371, 47 USPQ2d at 1366 (quoting *In re Reuter*, 670 F.2d 1015, 1021 n. 9, 210 USPQ 249, 255 n. 9 (CCPA 1981)).

Addressing first the cross-corroboration of oral testimony, we conclude that the Special Master rightly refused to accept it as adequate. A review of the relevant case law reveals a clear requirement that such oral testimony by interested parties must be corroborated by documentary testimony. Starting with the Supreme Court's decision in *The Barbed Wire Patent Case*, 143 U.S. 275, 12 S.Ct. 443, 36 L. Ed. 154

(1882), and ending with our recent decision in *Union Carbide v. Shell Oil Co.*, 308 F.3d 1167, 1189, 64 USPQ2d 1545, 1560 (Fed.Cir.2002), courts have consistently required documentary corroboration of oral testimony by interested parties presented to invalidate a patent. For example, in *Union Carbide* we held "[u]ncorroborated oral testimony by interested parties is insufficient as a matter of law to establish invalidity of [a] patent." 308 F.3d at 1189, 64 USPQ2d at 1560 (holding the oral testimony of two Shell employees was insufficient to prove anticipation because it was otherwise uncorroborated) (citation omitted); *accord Juicy Whip, Inc. v. Orange Bang, Inc.*, 292 F.3d 728, 740-43, 63 USPQ2d 1251, 1259-62 (Fed. Cir.2002) (holding oral testimony by six interested witnesses uncorroborated by documentary evidence was not sufficient evidence to support a jury's finding of anticipation). The evidence at issue here consists of oral testimony by three Hayes employees, all of whom testified that all of the prototype wheels used in public or sold by Hayes had voids or gaps in the adhesive pattern. Because this oral testimony is not of such a character as to differentiate it from that rejected in the precedents cited above, we conclude that the Special Master did not err in not accepting the testimony of one witness to corroborate that of another.

We look now to defendants-cross appellants' second argument regarding corroboration. The documents in evidence were Minutes of a 1993 meeting with McKechnie, a 1993 Hayes memorandum, a 1994 Hayes memorandum, and Hayes' U.S. Patent No. 5,435,631 filed February 24, 1994. Hayes and McKechnie attempt to portray the Special Master's determination as requiring each document to independently provide a detailed description as to the extent and pattern of

adhesive coverage, but the reasonable reading, our reading, of his findings is simply that he found the documentary evidence, as well as the witness testimony, insufficient to carry a clear and convincing burden.

The Special Master's factual determinations as to the insufficiency of the documentary evidence are thorough. He evaluated each document, discussed it thoroughly, and considered whether it corroborated the testimony of the three Hayes employees. For example, the Special Master considered the 1993 Minutes of a McKechnie meeting discussing "open areas between the overlay and the base wheel" "too general and incomplete" because "[t]he document contains no identification of the affiliation of [the author], no connection between the project being discussed and the unmentioned Hayes F-150 prototype wheels, and no description of the adhesive application pattern or quantity." After a similar discussion of each other document in evidence, the Special Master evaluated the totality of the evidence before him and found that evidence insufficient:

> To satisfy their burden of proof on this defense, defendants rely on the testimony of three of their own employees . . . and certain Hayes documentation. No testimony or documentation from any other source supports defendants' evidence. Here, even [their] documentation is incomplete, ambiguous, or contradictory . . . . [Their] proofs concerning the extent of adhesive coverage on its pre-critical date composite wheels are too incomplete, speculative, uncorroborated and contradictory to fulfill their burden of establishing correlation with the

> *claimed invention* by clear and convincing evidence. The relevant documents do not serve to persuasively corroborate the testimony of defendants' own witness, because the documents themselves are also too incomplete or contradictory to meet that standard.

(emphasis in original).

In light of the Special Master's complete and specific findings and his correct understanding of our case law on corroboration of oral testimony, we conclude that the Special Master committed no reversible error. We therefore affirm his finding that the pre-critical date activities of Hayes and McKechnie did not raise a bar under § 102(b) to claims 11-13, 20-22, and 24-25 of Lacks' '213 patent. His conclusion is affirmable as untainted by legal error and well supported by factual findings that are not clearly erroneous.

IV.

In sum, we affirm in part, vacate in part, and remand. We affirm: (1) the district court's grants of summary judgment of noninfringement of both the '809 and '906 patents and of invalidity of claims 1, 3, and 8 of the '213 patent and (2) the court's adoption of the Special Master's findings that claims 11-13, 20, and 24-25 of the '213 patent were infringed and were not proven invalid as a result of the pre-critical date public use or sale by Hayes or McKechnie. We vacate the district court's grant of summary judgment of invalidity for obviousness of all the asserted claims of the '809 and '906 patents because we need not reach an affirmative defense to infringement not embodied

in a counterclaim for declaratory judgment. Finally, we vacate and remand the court's adoption of the Special Master's finding that claims 11-13, 20-22, and 24-25 of the '213 patent were invalid as a result of Lacks' pre-critical date commercial activities because he applied an outdated legal standard. On remand the district court (or Special Master) should resolve whether or not it needs to take additional evidence on sales practice in the automotive industry to determine if the sales promotion activities by Lacks rise to a contractual offer for sale (and, of course, take such evidence if necessary). If it does not again find those claims of the '213 patent invalid, the court then must determine the extent of the damages suffered by Lacks as a result of the infringement of the '213 patent by Hayes and McKechnie.

AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED.

COSTS.

No costs.

PAULINE NEWMAN, Circuit Judge, concurring in part and dissenting in part.

I concur in part of the panel majority's opinion, and write separately to state my concerns with two aspects of the decision. First, in treating the on-sale issue, my colleagues have departed from the correct law. And second, the court has created a new and unnecessary melding of prior art, anticipation, and statutory bar, in ruling *sua sponte* that the '213 patent is barred by the "laying open" of foreign counterparts of related United States patents of the same inventor.

The On-Sale Bar

The district court applied an incorrect legal standard when it held that an invalidating offer of sale under 35 U.S.C. § 102(b) may be met by a patentee's market development activity that does not meet the criteria of an offer of sale under contract law principles. As discussed in *Group One, Ltd. v. Hallmark Cards, Inc.*, 254 F.3d 1041, 59 USPQ2d 1121 (Fed.Cir.2001), the "on sale" provision of § 102(b) is construed under general contract principles, and thus an invalidating offer must be an offer of sale "which the other party could make into a binding sales contract by simple acceptance (assuming consideration)." *Group One,* 254 F.3d at 1048, 49 USPQ2d at 1126. In *Group One* the court cited the need for national uniformity in the law of on-sale, and stressed the importance of application of contract principles in achieving this uniformity.

My colleagues on this panel depart from this simple standard and its important policy purpose, and instead hold that individual variations in industry practice control whether there has been an offer of sale under § 102(b), whether or not the contract law-based requirement of Group One is met. Thus the panel majority remands for "taking additional evidence on the practice in the industry to determine if the activities by Lacks rise to an offer for sale under the UCC." Maj. op. at 22. Such industry-specific, local, and subjective criteria are a regression toward the imprecision of the discredited "totality of the circumstances," a standard purposefully rejected by the Supreme Court in *Pfaff v. Wells Electronics, Inc.*, 525 U.S. 55, 119 S.Ct. 304, 142 L.Ed.2d 261, 48 USPQ2d 1641(1998). Determination of whether there

has been an offer of sale in terms of § 102(b) requires objective application of uniform contract law, not indulgence based on disputed local custom in the automobile tire wheel cladding business.

In developing uniform national law it is as important that the law be consistent across industry boundaries as it is across state boundaries. Such consistency is undermined by the majority's new accommodation to assertions of idiosyncratic industry patterns of dealing. While principles of federalism counsel against imposing a possibly alien legal standard upon transactions that are primarily matters of state law, such as the law of sales, the panel majority is not here invoking the guidance of state law, but of practices ostensibly peculiar to a segment of the automotive industry—practices unencumbered by state law, indeed unknown, uncodified, and variable. The majority's remand for the purpose of ascertaining that industry practice is at variance with *Pfaff* and its implementing precedent. I must, respectfully, dissent from this novel and incorrect interpretation of the law of on-sale.

Anticipation/Statutory Bar

Lacks' own foreign applications of common inventorship are not prior art against the '213 patent, for "prior art" must be the work of "another." The court explained in *In re Land*, 54 C.C.P.A. 806, 368 F.2d 866, 151 USPQ 621 (CCPA 1966):

> The significant words in 102(a) are "known or used by others . . . before the invention thereof by the applicant" and the parallel words in 102(e) are "application for patent by another . . .

> before the invention thereof by the applicant" (emphasis ours). These are the key words on which resolution of the present problem turns. The real issue is whether all the evidence, including the references, truly shows knowledge by another prior to the time appellants made their invention or whether it shows the contrary. It is a question of fact.

Id. at 878, 151 USPQ at 632. I agree with the panel majority that the district court erred in invalidating Lacks' '213 patent based on anticipation by the laid-open German and Japanese counterparts of Lacks' copending 904,180 application. However, I do not agree that these foreign documents are a statutory bar against Lacks' '213 patent.

The 904,180 application is the basis of Lacks' United States Patents Nos. 5,577,809 and 5,636,906, here in suit. The '213 patent application was filed before the United States '809 and '906 patents were issued, but the German and Japanese counterpart applications of the '809 and '906 patents were opened for public inspection more than one year before the '213 application was filed. It is as incongruous as it is unnecessary to convert into a statutory bar an inventor's pending foreign patent applications on an earlier development that cannot be cited as prior art.

Consecutive patent applications on various phases of inventive subject matter are quite common when research is ongoing. The laying open of foreign patent applications, before the patents are granted, is required in some countries. These foreign counterparts are not prior art because they have the same inventor. And even if they were available as prior art or bar, if

the '213 patent were of common text with the 904,180 application Lacks could be entitled to the earlier date for the common text, and if it is not of common text it is not a statutory bar to the non-common text.

The statutory rule that an inventor is not entitled to a patent if he publishes or offers to sell or publicly uses the invention more than a year before he files a patent application is designed to press the inventor into timely participation in the patent system. Thus when an invention is published, for example in a technical journal, and there is no patent filing for a year, a would-be competitor may conclude that no adverse patent rights bar his use of that technology. But when the asserted publication is a laid open foreign counterpart, no public policy requires construing this document as a dedication of all patent rights to any future enlargements and improvements of that subject matter.

Section 102 permits an inventor to present ongoing developments in successive patent applications, in the course of obstacles to the routine development of inventions. The "statutory bar" is for the purpose of assuring that the inventor's participation in the patent system is not unreasonably delayed. When the patent application is timely under United States law, it is not reasonable to subject it to an invalidating bar by foreign publication of an earlier specification that is not prior art.

The '213 patent is a method patent. It is not the same invention as described in the 904,180 application as laid open in Germany and Japan. The 904,180 specification describes the plastic overlay, its shape, composition, and the electroplating of its surface, and

also describes the formation of the composite wheel by attaching the overlay to the underlying wheel. In the 904,180 specification the method of attaching the overlay to the wheel is generally stated without details, for example: "The panel 22 is adhesively bonded directly to the outboard surface of the wheel 11 either with a suitable adhesive 30 as shown, or in any other suitable manner." '809 patent, col. 9, lines 55-57. In contrast, the '213 patent describes in detail the method of attaching the overlay to the underlying wheel using a slow-curing adhesive; the pattern of adhesive application is discussed at length, with discussion of such considerations as maintaining wheel balance, minimizing weight, providing a seal to keep dirt and moisture out of the space between the overlay and the wheel, and compensating for irregularities in the underlying wheel shape. This subject matter is not in the 904,180 application, and is not in the laid open German and Japanese documents.

Also described at length in the '213 patent are the inventor's solutions to the problem of accurately locating the overlay and holding it in position for the several hours required for the permanent adhesive to cure. This is set forth in the '213 patent as the temporary attachment for which several methods are described, including using a weaker, hot melt adhesive for the purpose, or an adhesive tape, or a mechanical fastener. These methods are not set forth in the German and Japanese documents except for the boss used to locate and position the overlay, although without suggestion that this boss provides a temporary attachment while the adhesive cures. Indeed, the use of a slow-curing adhesive is not mentioned in the German and Japanese documents, for the 904,180

specification states no need for a temporary attachment, mechanical or otherwise.

To constitute a statutory bar, the publication must describe and enable[1] the same invention as claimed in the patent alleged to be barred, in the same technologic detail. The 904,180 specification is directed to the metal-plated overlay and the composite wheel, and the '213 patent is directed to the method of assembling the overlay and the wheel, and includes operative details and embodiments not previously described. On this ground alone, the 904,180 foreign counterparts do not bar the '213 patent. No public interest is served by a law that turns earlier developments into a bar to any later patent, requiring either secrecy or the need to forego foreign patents that are promptly laid open. Such pitfalls are not required by the Patent Act, and should not be created by this court.

Thus I must also dissent from the court's holding that the publication of the foreign counterparts of the 904,180 application produced a statutory bar to claims of the '213 patent.

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[1] Lacks had argued at trial that the 904,180 application does not contain an enabling disclosure of the subject matter of the '213 patent. The district court did not decide this point, deeming the issue to be "anticipation" and stating that an anticipating reference need not be an enabling reference. That statement is incorrect. *See, e.g., Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354, 65 USPQ2d 1385, 1416 (Fed.Cir.2003) ("A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled.")

CLEVENGER, Circuit Judge, dissenting in part.

I join the court's opinion in all but two respects, upon which I respectfully dissent. On the first point, I disagree with the ground upon which the court affirms the judgment of the district court that the claims of the '809 and '906 are not infringed. For the reasons that follow, I would reverse the district court's interpretation of the "axial peripheral lip" limitation, and thus not rely on that limitation to sustain the judgment of noninfringement. Instead, I would apply the correct interpretation of the "wheel face outer surface" limitation to the accused products, and in so doing would employ the uncontested facts to sustain the district court's judgment of noninfringement on this alternate ground.

Second, for the reasons stated below, I disagree with the court's affirmance of the district court's finding of infringement of claims 11-13, 20, 24, and 25 of the '213 patent. I think we should have rejected these findings as clearly erroneous, on the ground that the evidence failed to prove that the accused devices met the Ford durability testing standard set by the district court as the measurement device for assessing infringement of the "permanently secure" claim limitation.

I

I would reverse the district court's interpretation of "axial peripheral lip." However, as I conclude that the construction of "wheel face outer surface" compels a finding of noninfringement, I concur with the court's opinion on this issue.

The district court's claim construction of "axial peripheral lip" is unusual. Defining "axial peripheral lip" as the "*uncovered* surface of the composite wheel that starts at the edge of the cladding, goes up and over the top of the projecting rim lip, and ends where the outer side of the rim lip merges with the tire mounting surface of the wheel rim" (emphasis in original) literally means that the accused products must meet the claim requirement that the ornamental surface "not cover" the axial peripheral lip, since the axial peripheral lip, by the district court's definition, is uncovered. This renders the district court's finding of noninfringement somewhat opaque.

The district court's claim construction views the "axial peripheral lip" as including both some portion of the wheel wall below the innermost edge of the wheel rim (facing the center of the wheel) as well as the top of the wheel rim. This is evident from both the district court's definition given above, as well as its characterization of the defendant's ornamental panel as "terminating just shy of the tip of the lip." The parties concede that the term "axial peripheral lip" has no particular meaning in the art. The standard dictionary definition of "lip" is given as "an edge, rim, or margin," or even more specifically as the "edge or margin of a hollow vessel." *Webster's 3rd New International Dictionary* 1318 (1993). Here, the diagrams indicate two separate edges on the wheel rim, an interior one facing the center of the wheel, and an external one facing the outside. In this context, the "axial peripheral lip" logically refers to the external one—the one furthest from the center of the wheel. However, there is an alternative possibility: the "axial peripheral lip" could also refer to the combination of

both "edges," along with the flat portion of the wheel rim in between.

Either of these definitions is inconsistent with the district court's interpretation of "axial peripheral lip," specifically the inclusion in the definition of some portion of the wheel wall below the innermost edge of the wheel rim. Both are strongly supported by the prosecution history. The claims at issue were amended in response to an office rejection for unpatentability in light of the Beith reference. Beith discloses a lip 43 "formed to grip the edge of the terminal flange 29 of the multi-flanged tire mounting rim 21 and, thereby, aid in fixing the wheel cover 12 to the wheel 13." Figures 2 (see below) and 5 depict lip 43 doing precisely this—extending over and around the outer circumferential edge of the rim to "grip" the wheel.

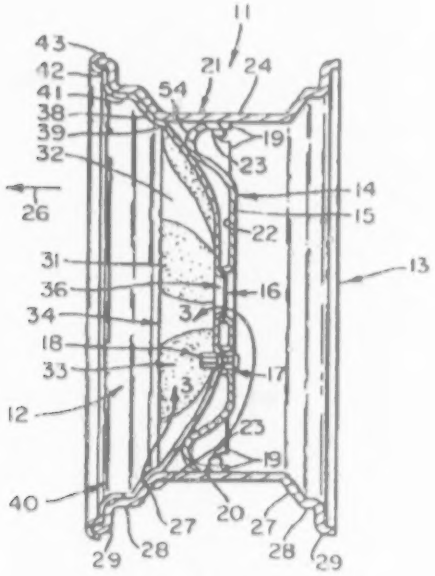


FIG. 2

In response to this rejection, the patentee added the requirement that the ornamental panel "not cover" the axial peripheral lip. As can be seen from Figure 2, in order to distinguish over Beith, the patentee needed to emphasize that his ornamental panel did not overlap the very outer edge of the wheel rim.

It is difficult to square the import of this amendment with a claim construction interpreting "axial peripheral lip" as including some undefined portion of the wheel wall below the interior "edge," particularly if we presume that the patentee only surrendered enough structure to get out from under Beith.

As a result, I would reverse the district court's claim construction as to "axial peripheral lip," interpreting it instead as either the outer terminal edge or, alternatively, the highest point on the wheel rim.

I now turn to the "wheel face outer surface" claim limitation. The claim language expressly characterizes the wheel face outer surface, providing that "said web portion and said peripheral rim portion define a wheel face outer surface." '809 patent, col. 11, ll. 4-5. This appears to be a closed definition, the wheel face outer surface consisting of only two elements—the central web portion and the peripheral rim portion. The claim language further defines the axial peripheral lip as "circumscribing said peripheral rim portion," *id.* at col. 11, ll. 1-2, and requires that the ornamental panel cover "said *entire* wheel face outer surface," *id.* at col. 11, l. 10 (emphasis added).

To my mind, this claim language explicitly defines the wheel face outer surface as extending precisely up to the terminal boundary of the peripheral rim portion—the axial peripheral lip. Indeed, despite its differing construction of "axial peripheral lip," this is what the district court concluded as well. This interpretation would thus allow no portion of the peripheral rim portion to be uncovered by the ornamental panel.

Such a conclusion is problematic, however, given Figures 3 and 5 of the '809 and '906 patents. These clearly depict the ornamental panel as only covering part of the peripheral rim portion. The above interpretation would thus read out the preferred embodiment.

As a general rule, claim interpretations, which operate to exclude the preferred embodiment, are "rarely, if ever, correct and require highly persuasive evidentiary support." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583, 39 USPQ2d 1573, 1578 (Fed.Cir.1996). However, we have found that such a conclusion can be mandated by clear intrinsic evidence, such as "unambiguous" claim language. *Elekta Instrument v. O.U.R. Sci. Int'l*, 214 F.3d 1302, 1308, 54 USPQ2d 1910, 1914 (Fed.Cir.2000). *See also Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 61 USPQ2d 1368 (Fed.Cir.2002) (reaching a claim interpretation excluding some of the preferred embodiments in light of the prosecution history). Here, the claim language is quite explicit in both defining the "wheel face outer surface" and in requiring it to be completely covered by the ornamental panel, and I would find that it constitutes an exception to the general rule.

Indeed, the linkage of the two claim requirements, that the cladding cover the *entire* wheel face outer surface, but that it *not* cover the axial peripheral lip only has meaning in the situation where the axial peripheral lip is actually providing a boundary for the overlay. Any other construction of "wheel face outer surface" would essentially mean that there is a separate interior boundary for the overlay coverage. In such a situation, the requirement that the overlay not cover the axial peripheral lip is surplusage.

Rejecting the above construction leaves open a substantial question as to what the "wheel face outer surface" actually is. Lacks's suggestion that it merely requires partial coverage of the "peripheral rim portion" is extremely unsatisfying. First, the claim language describes "said web portion and said peripheral rim portion defining a wheel face outer surface." If this language includes both elements in the definition, then full coverage is required. If it does not, Lacks's suggestion that "partial" coverage of the rim portion suffices would make the use of "entire" completely meaningless—there would be no way to define how much coverage of the peripheral rim portion is required.

The district court used the Hayes diagram to evaluate the accused device. Lacks's brief references the same diagram. It discloses an ornamental panel terminating, as the district court found, "just shy of the tip of the lip." Neither of the parties dispute that this is an accurate representation of the accused product.

Employing the claim constructions given above, the district court's finding of noninfringement can be

sustained. Even if the accused product meets the limitation requiring that the ornamental panel not cover the "axial peripheral lip," the ornamental panel does not cover the entire wheel face outer surface, as there is a gap between the ornamental panel and the axial peripheral lip. The district court's grant of summary judgment of noninfringement of the claims of the '809 and '906 patents was correct, for the reasons I have stated.

II

Hayes and McKechnie cross-appeal the finding of infringement of the asserted claims of the '213 patent. For the reasons that follow, I agree with Hayes and McKechnie, and disagree with the contrary decision by the court affirming the district court's resolution of this issue.

Claims 11-13, 20, and 24-25 of the '213 patent require that the adhesive "permanently secure" the overlay to the wheel. '213 patent, col. 15, l. 31. The district court interpreted this to require that the adhesive be "*itself* capable of securing the overlay to the wheel during the normal useful life of the wheel" (emphasis in original). The Special Master concluded that this test was met if the adhesive:

> (1) . . . satisfies the specifications set forth on the Hayes engineering drawing for the accused F-150 wheel (Exh. 42) and (2) retains sufficient retentive strength (without reliance on the mechanical locking system) to secure the overlay throughout Ford's vehicle durability testing, but with a modified upper temperature limit as discussed below.

This is a very reasonable test. Unfortunately, it is not applied. Having established the Ford vehicle durability testing as a key component of the infringement test, the Special Master's report indicates that not only is there almost no evidence as to what the Ford testing consists of, there is no evidence that there was ever any testing of the wheel on an actual *vehicle*.

First, the Special Master notes, "[w]ith regard to the Ford durability testing conditions, the Special Master finds the record to be somewhat incomplete. There is no description of what type of corrosion testing is performed as part of such durability tests on the vehicle, or the other durability testing performed at the Ford's Arizona Proving Ground . . . ." The report also states:

> With regard to Ford's own *durability testing on driven vehicles*, Mr. Thomas Heck [a Hayes director] testified that these generally consisted of corrosion testing and power train durability testing. The accused Hayes wheels had to pass these Ford tests. There was no testimony or documentation concerning what Ford would consider acceptable performance of the wheel overlays during such tests. [Emphasis added.]

In other words, having set up "Ford's vehicle durability testing" as a key element in evaluating the claim, the Special Master seems to be explicitly acknowledging that it is uncertain as to *what* that durability testing actually is.

Second, the Special Master also explicitly states that "[t]here is no evidence, however, of *vehicle* testing

on the accused wheels with the mechanical lock component of the overlay system disabled and only the adhesive component of the overlay system operative" (emphasis in original). This, again, is somewhat problematic in light of the Special Master's own definition of the test for infringement as requiring just such a demonstration.

Lacks accurately points out that the Smithers rotary, radial fatigue, and impact testing was done (pursuant to standard testing procedure) on individual wheels with the mechanical locking system disabled. Under our deferential standard of review of factual issues, these might suffice to support a finding of infringement, had they actually comprised part of the Special Master's own test for infringement. However, as mentioned above, the Special Master explicitly required that the adhesive demonstrate retentive strength "throughout Ford's *vehicle* durability testing" (emphasis added). This language itself contains the word "vehicle," strongly suggesting that some of the testing should be on an actual vehicle. In addition, despite the apparent uncertainty discussed above as to what Ford's durability testing consisted of, the Special Master described at least "one phase of Ford's durability testing" as consisting of an actual vehicle test drive. As cited above, the report also references "Ford's own durability testing on driven vehicles." In contrast, the alternative tests are not Ford durability tests, nor even vehicle tests, and thus are not probative under the standard of evaluation defined by the Special Master.

Third, as the Special Master noted, the only other testing performed with the mechanical lock disabled, the McKechnie "pull-off test," was "not designed as a

durability test or simulation of any particular type of removal force that would be encountered in the field," much less a Ford durability test. Again, were the Special Master to have simply cited this test as evidence in favor of the fact that the accused device met the "permanently secure" claim limitation, it would likely survive our deferential standard of review. Here, however, having established the Ford durability test as an explicit standard for how to evaluate infringement, the Report's reliance on evidence, which falls outside of this standard, is both logically and legally incorrect.

We thus should conclude that the Special Master's decision as to infringement of the '213 patent claims is clearly erroneous, and that the district court accordingly should have rejected these findings and entered judgment of noninfringement of the asserted claims of the '213 patent.

APPENDIX E

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

No. 96-75692

[Dated April 23, 2001]

LACKS INDUSTRIES, INC.,
a Michigan Corporation,

Plaintiff and Counter-Defendant,

-vs-

McKECHNIE VEHICLE COMPONENTS USA., INC., dba THOMPSON INTERNATIONAL
A Delaware Corporation,

Defendant,

and

HAYES WHEEL INTERNATIONAL, INC.,
a Delaware Corporation,

Defendant and Counter-Plaintiff

JUDGMENT

The Court, having considered the Special Master's original Report and Recommendation, dated January 17, 2001; the parties' written objections thereto filed in accordance with Rule 53(e), Fed. R. Civ. P.; the presentations of the parties at a hearing held on March 27, 2001; the post-hearing submissions of the parties; and the Special Master's Amended Report and Recommendation, dated April 17, 2001, copy attached; and pursuant to the Stipulation and Order Regarding Appointment of Special Master, dated February 15, 2000, which provided that "the Special Master's findings of fact shall be final and only conclusions of law will thereafter be considered by the Court;"

IT IS HEREBY ORDERED THAT:

1. The Special Master's Amended Report and Recommendation is adopted in its entirety.

2. Claims 11-13, 20-22, 24 and 25 of United States Patent No. 5,597,213 are invalid under 35 U.S.C. §102(b).

3. Accordingly, and in further view of this Court's Opinion and Orders of July 1, 1999 and August 2, 1999, Judgment ~~will be~~ is [cjc] is entered in favor of Defendants and against Plaintiff.

4. Costs, in an amount to be determined, shall be awarded to Defendants.

/s/ John Feikens
John Feikens
United States District Judge

Dated: April 23, 2001

/s/Carol J. Cohron
Deputy Clerk

APPENDIX F

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

No. 96-75692

[Dated April 17, 2001]

LACKS INDUSTRIES, INC.,
a Michigan Corporation,

Plaintiff and Counter-Defendant,

-vs-

McKECHNIE VEHICLE COMPONENTS USA., INC., dba THOMPSON INTERNATIONAL
A Delaware Corporation,

Defendant,

and

HAYES WHEEL INTERNATIONAL, INC.,
a Delaware Corporation,

Defendant and Counter-Plaintiff

Hon. John Feikens

Richard D. Grauer, Special Master

SPECIAL MASTER'S AMENDED REPORT AND RECOMMENDATION AMENDED FINDINGS OF FACT AND CONCLUSIONS OF LAW

AMENDED FINDINGS OF FACT AND CONCLUSIONS OF LAW

I. INTRODUCTION

A. Procedural History

This patent infringement suit was brought by plaintiff, Lacks Industries, Inc. ("Lacks"), charging that defendants, McKechnie Vehicle Components U.S.A., Inc. f/k/a Thompson International ("McKechnie"), and Hayes Lemerz International, Inc., f/k/a Hayes Wheels International, Inc. ("Hayes"), infringe three Lacks-owned patents relating to decorative overlays or claddings for vehicle wheels. These Findings of Fact and Conclusions of Law follow a trial that was confined to the liability phase of the infringement charge as to the most recent of the three patents, U.S. Patent No. 5,597,213, entitled "Wheel and Overlay Assembly" ("the '213 Patent").

Two Opinion and Orders entered by the Honorable John Feikens on July 1, 1999 and August 2, 1999 granted a series of partial summary judgment motions jointly filed by the two Defendants, whereby all asserted claims of the first two patents (U.S. Patent Nos. 5,636,906 and 5,577,809) were held invalid and not literally infringed. 55 F. Supp. 2d 702 (E.D. Mich. 1999). The issue of infringement under the doctrine of

equivalents was not raised as to any of the three patents.

With respect to the '213 Patent, Judge Feikens granted summary judgment of literal noninfringement of claims 1, 3, 7-9, 32, 35 and 37-39, and invalidity of claims 1, 3 and 8 based on anticipation by Lacks' foreign patents corresponding to the earlier two asserted patents. Summary judgment of literal noninfringement was denied with respect to claim 25, based upon the existence of genuine issues of material fact. Also denied by Judge Feikens, because of genuine issues of material fact, were Defendants' summary judgment motions of invalidity based on (1) failure to satisfy the written description and best mode requirements of Section 112; (2) on-sale or public use bar arising from Lacks' and/or Defendants' pre-critical date activities (also based on lack of clear and convincing evidence); and (3) obviousness over the previously referenced foreign patents and other prior art patents, based upon an inadequate record. Claim 40 of the '213 Patent was held invalid as indefinite. Claims 2, 4-6, 10, 14-19, 23, 26-31 33, 34 and 36 had previously been dismissed with prejudice by consent of the parties.

Thus, the '213 Patent claims that survived for trial were claims 11-13, 20-22, 24 and 25 ("the Remaining Claims"). Following conclusion of the trial, Lacks conceded that Defendants do not infringe claims 21-22.[1] However, Defendants had filed a Counterclaim seeking a declaration that all claims of the '213 Patent

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[1] Plaintiffs Proposed Findings of Fact and Conclusions of Law, ¶1 of the Conclusions on Infringement.

are invalid, noninfringed and unenforceable. Defendants are therefore entitled to an adjudication as to the validity of claims 21-22, notwithstanding Lacks' concession of non-infringement.

By "Stipulation and Order Regarding Appointment of Special Master" dated February 15, 2000, the Special Master was directed to "make all factual findings and legal conclusions necessary to determine" whether Defendants' accused products infringe the Remaining Claims of the '213 Patent, and whether such claims are invalid under 35 U.S.C. §102(b) because of either Lacks' own "on sale" activities or Defendants' "on sale" or public use activities more than one year before the filing date of the '213 Patent.

A Markman Order construing the Remaining Claims was issued on March 21, 2000, and a five-day bench trial of the liability phase of the suit was held June 19-23, 2000. Trial testimony was received from thirteen witnesses, and approximately 300 exhibits were received in evidence. The parties simultaneously submitted Proposed Findings of Fact and Conclusions of Law on September 7, 2000, abundantly annotated to the record, and simultaneously submitted Post-Trial Briefs on October 6, 2000, wherein each party took the opportunity to respond to the other's Proposed Findings and Conclusions. All counsel did a commendable job of representing their clients, both at trial and in their thorough and helpful post-trial pleadings.

Following issuance of the original Report and Recommendation by the Special Master of January 17, 2001, all parties submitted their written Objections pursuant to Rule 53(e), Fed. R. Civ. P. A hearing on

the Objections was held before the Honorable John Feikens and the Special Master on March 27, 2001, and additional written arguments were subsequently filed by the parties. Upon further consideration by the Special Master, the present Amended Findings of Fact and Conclusions of Law are submitted.

B. The '213 Patent

The '213 Patent concerns decorative overlays or claddings (these words may be used interchangeably herein) for the outwardly facing surface of automotive wheels. These overlays, which may be made of high impact plastic, are plated with chromium and then secured to the underlying steel or aluminum wheel. The resulting composite wheel provides a less expensive substitute for chrome-plated wheels. As explained by the patent, the assembly process and subsequent operating environment for an automotive wheel impose several requirements, including economy of manufacture and assembly, quality of appearance, avoidance of galvanic corrosion and wheel imbalance, reduction of tire or impact-induced noise, and resistance to tire and brake-generated heat.

Because the prior art disclosed numerous techniques for constructing and applying overlays to wheels, the asserted patent claims were necessarily confined to a particular method for applying the overlays. Figure 2 of the patent drawings, showing one embodiment of the claimed method, is reproduced in the Appendix hereto. It is a view of a radial cross-section through a portion of wheel 10, showing the hub portion to the left of lug bolt opening 28, and wheel rim 12 at the right of the drawing. Overlay 16, with its decorative treatment layer 17, is secured to

wheel spider portion 14 and rim portion 12 by a "high strength, permanent adhesive" 30 that is preferably applied to selected portions near rim 12 and around lug bolt openings 28 to prevent entry of water and dirt between the overlay and wheel.

This particular embodiment also includes use of a hot melt adhesive, capable of forming an almost instant bond to maintain proper positioning of the overlay while the slow-curing permanent adhesive 30 is curing, but not itself suitable for permanently securing the overlay. The temporary positioning and securing means, however, whether in the form of hot melt adhesive or other disclosed alternatives, are not part of or pertinent to the claimed invention.

C. The Parties and Accused Products

Plaintiff Lacks makes exterior trim for the automotive industry, such as chrome-plated plastic, painted plastic hardware, grills, bumper trim, wheel trim, and body side moldings. Lacks does not make wheels. The overlays that it applies to wheels manufactured by others, in accordance with the patented method, are chrome-plated plastic.

Defendant McKechnie manufactures chrome-plated stainless steel overlays and supplies them to Defendant Hayes, who assembles them to wheels of its own manufacture. McKechnie also assembles its overlays to wheels manufactured by Meritor. By pre-trial stipulation, the composite wheels sold by Hayes for use on Ford F-150 trucks, using McKechnie overlays on Hayes wheels, as shown and described on Hayes drawing Exhibit 42, are representative of all the jointly-made accused McKechnie/Hayes composite

wheels.[2] McKechnie stipulated following trial that Exhibit 42 was also representative of the McKechnie/Meritor composite wheels.[3]

II. INFRINGEMENT

A. The Asserted Claims

It is Lacks' burden to prove infringement by a preponderance of the evidence. *Seal-Flex, Inc. v. Athletic Track and Court Constr.*, 172 F.3d 836, 842 (Fed. Cir. 1999).

Defendants' challenge to infringement is confined to one limitation identically found in both independent claims 11 and 25.[4] The Remaining Claims are reproduced below, with emphasis added for the limitation upon which the infringement issue turns:

> 11. A method for assembling an overlay to a wheel having a disk portion and a rim portion circumscribing said disk portion, said disk and rim portions defining an outboard surface of said wheel, said method comprising the steps of:
>
> forming said overlay to have an inboard surface configured to face said outboard surface of said wheel upon assembling said overlay to

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[2] Final Pre-Trial Order, Stipulation of Facts, ¶1.

[3] Defendants' Proposed Findings of Fact and Conclusions of Law, ¶4, fn.2.

[4] Heck at 95-101 *(i.e.*, witness name followed by pertinent trial transcript pages).

said wheel, said overlay being configured so as to form a gap between said inboard and outboard surfaces upon assembling said overlay to said wheel;

selectively depositing a curable adhesive on at least one of said inboard and outboard surfaces such that said curable adhesive is between said overlay and said wheel upon assembling said overlay with said wheel, said curable adhesive being deposited in an amount that is insufficient to entirely fill said gap; and

assembling said overlay to said outboard surface of said wheel with said curable adhesive so as to form said gap and ***permanently secure*** said overlay to said wheel, at least one void being present between said overlay and said outboard surface of said wheel.

12. The method of claim 11 wherein said depositing step comprises selectively depositing said curable adhesive along a peripheral edge of said at least one of said inboard and outboard surfaces so as to exclude water and dirt from said gap after said assembling step.

13. The method of claim 12 further comprising the step of forming said wheel to have openings in said outboard surface, and wherein said depositing step further comprises selectively depositing said curable adhesive around said openings so as to exclude water and dirt from said gap after said assembling step.

20. The method of claim 11 wherein said depositing step comprises selectively depositing said curable adhesive so as to alter heat transfer between said wheel and said overlay.

21. The method of claim 11 wherein said depositing step comprises selectively depositing said curable adhesive so as to balance said wheel.

22. The method of claim 11 wherein said depositing step comprises selectively depositing said curable adhesive so as to alter the acoustical characteristics of said overlay and said wheel.

24. The method of claim 11 wherein said curable adhesive is an air-curable adhesive, and wherein said assembling step results in said at least one void entrapping air between said overlay and said wheel.

25. A method for assembling an overlay to a wheel, said method comprising the steps of:

forming said wheel to have a disk portion and a rim portion circumscribing said disk portion, said disk and rim portions defining an outboard surface of said wheel, said outboard surface having apertures formed therein;

forming said overlay to have an inboard surface configured to face said outboard surface upon assembling said overlay to said wheel, said overlay being configured so as to form a

gap between said inboard and outboard surfaces upon assembling said overlay to said wheel;

depositing a curable adhesive on said outboard surface such that said curable adhesive is between said overlay and said wheel upon assembling said overlay with said wheel, said curable adhesive being selectively deposited along a peripheral edge of said outboard surface and around said apertures so as to exclude water and dirt from said gap upon assembling said overlay to said wheel; and

assembling said overlay to said outboard surface of said wheel with said curable adhesive so as to form said gap and ***permanently secure*** said overlay to said wheel, at least one void being present between said overlay and said outboard surface of said wheel, said at least one void entrapping air between said overlay and said wheel.

The Markman Order of March 21, 2000 construed the "permanently secure" claim limitation to mean that "the curable adhesive is itself capable of securing the overlay to the wheel during the normal useful life of the wheel (emphasis in original)." The Markman Order further concluded that "[N]othing in the quoted claim limitation precludes the presence of additional elements that are also capable of securing the overlay to the wheel, either temporarily or permanently." The accused McKechnie/Hayes retention system includes both a curable adhesive and a "snap-fit" type of mechanical lock between the periphery of the overlay and the outer flange of the wheel. Defendants contend that it is their mechanical lock, not their curable

adhesive, that permanently secures the overlay to the wheel, thereby avoiding infringement of all the Remaining Claims.

B. What is "Normal Useful Life" and How is it Simulated?

The parties agree that the duration of a wheel's normal useful life is ten years and one hundred thousand miles.[5] They disagree, however, on what environmental and service conditions must be withstood by the overlay retention system, what test techniques are appropriate, and what qualitative or quantitative test results warrant a conclusion that the adhesive, rather than the mechanical lock, permanently secures the overlay in the accused composite wheels. Several preliminary factual issues must therefore be resolved: (1) are there any industry performance standards for wheel overlay retention? (2) what operational and environmental conditions does a wheel/overlay assembly *normally* experience? (3) what laboratory and/or vehicle testing is appropriate for evaluating the retention capability of a wheel overlay securing system? and (4) what test results must be achieved to warrant a conclusion that the curable adhesive is capable of permanently securing the overlay, as required by the patent claims?

The most relevant and reliable sources for answers to these questions would seem to be the '213 Patent itself, industry standards or specifications and the parties' own pre-litigation documentation and activities concerning the development and marketing

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[5] Chase at 53; Heck at 789.

of their respective products. These are discussed below.

(1) The '213 Patent

The '213 Patent generally describes the various physical conditions normally experienced by automobile wheels. References are made to "high temperatures experienced under certain actual road conditions," particularly in the region of the wheel hub, "where temperatures tend to be much higher than in the remainder of the wheel,"[6] and to "the hostile thermal and physical environment of an automotive wheel,"[7] which includes high temperatures and "severe impacts or harsh handling."[8] However, the patent provides no quantitative values for these operating conditions and identifies no applicable performance standards that must be satisfied by an overlay securing system. Hot melt adhesive and adhesive tape are rejected as unable "to withstand the maximum expected service temperature for the wheel,"[9] from which it is fair to infer that such temperature, whatever its numerical value, represents one controlling condition.

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[6] '213 Patent specification, col. 2, lines 14-17. See also, col. 3, lines 1-4; col. 11, lines 56-62.

[7] *Id.* at col. 4, lines 48-49. See also, col. 4, lines 34-35; col. 6, lines 35-36; col. 9, line 31; col. 11, lines 24-25.

[8] *Id.* at col. 7, lines 15-16. See also, col. 8, lines 63-64; col. 9, lines 11-12.

[9] *Id.* at col. 4, lines 28-32.

The patent indicates that a high impact plastic is the preferred material for the overlay itself,[10] but the Remaining Claims are not so limited.

(2) Industry Standards

(a) Ford's F-150 Specifications

As far as the record shows, the automobile manufacturers had specifications or performance standards for wheels, and specifications for general use of adhesives, but no separate specifications existed for securing overlays (as contrasted with detachable wheel covers) to wheels. Therefore, to establish an appropriate bench-mark for determining whether the adhesive in the accused composite wheels "is itself capable of securing the overlay to the wheel during the normal useful life of the wheel," the court must construct a mosaic of numerous laboratory and vehicle tests and related trial testimony. The trial record comes closest to providing a complete set of OEM *(i.e.,* original equipment manufacturer) standards for a non-detachable wheel overlay in the evidence concerning Ford's specifications for the representative accused wheel/overlay assembly for its 1995 model year Ford F-150 truck, and the related testing conducted to validate that wheel for Ford's use.

The Hayes Wheels engineering drawing for that wheel overlay assembly (Exh. 42) is essentially a contract between Hayes and Ford regarding the product to be supplied. It lists the specifications for radial and rotary fatigue-type testing (to be performed

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[10] *Id.* at col. 6, lines 30-32.

by Hayes) and for the adhesive (to be tested by the adhesive supplier, Lord Chemical Company). No specifications for so-called durability testing are listed on the drawing, as Ford itself performs that testing after the wheels are mounted on the vehicle.

Radial and rotary testing are automotive industry-accepted laboratory tests performed by wheel manufacturers to test the structural integrity of the wheel itself, including the structure to which it is mounted and the wheel bolts. Engineers from both sides of this dispute agreed that these tests are appropriately included in the testing of the securing system for the wheel overlay. Both tests are "accelerated" in that the applied loads are higher than would be encountered in actual service, so that any adverse results would be revealed long before the number of cycles required to simulate expected service life. The radial fatigue test applies an exaggerated force to the rotating wheel/tire assembly representative of the manner that the wheel would be loaded if running straight down a highway. The rotary fatigue, or cornering, test simulates stresses transmitted to the wheel from the tire/road interface as the vehicle corners in a typical skidding situation. This test, run without a tire, has the wheel rim clamped to a surface and a spindle bolted to the wheel bolt holes. A transverse load is applied to the spindle in a progressively rotating fashion so that the spindle tries to wobble about the wheel hub to which it is bolted, thereby subjecting the disk portion of the wheel to a continuously rotating pattern of deformation. Both tests tend to distort the wheel disc or face, and therefore stress the adhesive bond between the wheel and the overlay.

Impact testing, another standard wheel test that simulates lateral impacts with curbs, was not required by Ford because the accused wheel is a steel wheel.

The adhesive specifications on Hayes' F-150 wheel drawing require the use of Fusor 380/382, a two-part epoxy manufactured by Lord Corporation ("Lord"), and further require that the adhesive conform to Ford specification ESB-M11P27-A ("Ford Adhesive Specification) (Exh. 124) with certain stated exceptions discussed below. Although that particular Ford specification defines the adhesion requirements for adhesives suitable for structurally bonding fiberglass-to-fiberglass or fiberglass-to-metal, rather than metal to metal in the case of the F-150 wheel, that specification (as modified) was selected jointly by Lord, Ford engineering and Hayes as Ford's most appropriate preexisting specification. The approved exceptions to the Ford Adhesive Specification were the omission of sections 3.2.7 (salt spray), 3.3 (creep resistance) and 3.5 (metal primer corrosion resistance); a prescribed bond line area for coupon testing (explained below); and, most significantly for the present dispute, the substitution of 177 degrees Celsius (351 degrees Fahrenheit) for 204 degrees C (400 degrees F) for the elevated temperature testing.

Because much of the dispute on the infringement issue concerns the high temperature capabilities of the Fusor 380/382 adhesive, it is significant to stress here that two Hayes witnesses acknowledged that Ford, the customer for the accused composite wheels, participated in the selection of the modified Ford Adhesive Specification, including the explicitly approved reduction in the temperature setting for the elevated temperature testing of the adhesive' strength.

Indeed, it was admitted that it was necessary to get the approval of one of Ford's material engineers:

> Q. Okay. So Ford would have had to approve that that was something that they were satisfied would meet their requirements?
>
> A. They did approve, along with the exceptions that are listed on the front.[11]

Coupon testing of adhesive samples comprises shear tests on two small, flat, adhesively joined, overlapping panels ("coupons"), performed in a laboratory under specified environmental conditions of low and high temperature and high humidity. The approved substitution of the lower temperature for the elevated-temperature test of these particular coupons was made because it was known that Fusor 380/382 would not pass the test at Ford's standard adhesive test specification of 204 degrees C. Lord's product information sheet for that adhesive states that it is "resistant to postbakes up to 400°F (204°C)," and that, for clean-up of cured adhesive, "[h]eating to 400°F (204°C) or above will soften the adhesive, allowing the parts to be separated and the adhesive to be more easily removed."[12]

The foregoing, then, were the Ford-approved standards that were specified on the Hayes engineering drawing for the accused Ford F-150 wheel/overlay assembly. With regard to Ford's own

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[11] Maloney at 193-94. See also, Heck at 108.

[12] Exh. 321, pp. 5, 3, respectively.

durability testing on driven vehicles, Hayes' director of advanced wheel engineering for the fabricated wheel group, Mr. Thomas Heck, testified that these generally consisted of corrosion testing and power train durability testing. The accused Hayes wheels had to pass these Ford tests. There was no testimony or documentation concerning what Ford would consider acceptable performance of the wheel overlays during such tests. The Hayes documentation and testimony, concerning one of its early prototype wheels returned to Hayes after Ford's corrosion testing, sheds no light on the details of Ford's test methodology or performance standards.

One phase of Ford's durability testing, the "Davis Dam Test," was described by Mr. Heck and by Lack's technical expert witness, Mr. James Varin.[13] The Davis Dam Test is an abusive high-temperature test conducted by Ford's Arizona Proving Grounds personnel. It consists of a fifteen-mile descent from a high plateau to a dam on the Colorado River, with the driver repeatedly applying the brakes to lower the

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[13] Mr. Varin holds a bachelor's degree in mechanical engineering, a master's degree in engineering mechanics and a masters degree in metallurgy. After 12 years in aircraft engine design and metallurgy, he worked for Ford Motor Company for 22 years, a portion of which included responsibility for wheel attachments. As a result of that experience, he was familiar with the types of testing done on wheels to ascertain their durability and structural integrity. He did not claim expertise in adhesives per se. The Special Master found his testimony to be credible and of assistance in explaining the nature and significance of the various testing that was performed on the accused wheel/overlay assemblies and in reaching a determination as to whether the adhesive used by the Defendants was itself capable of securing the overlay to the wheel during the normal useful life of the wheel.

speed to 30 and 40 mph, and then accelerating to 50 mph, all the while remaining in "drive" gear. When the vehicle reaches the bottom, it is stopped and temperatures are allowed to rise during a "soak" period when no cooling air flows around the stationary brakes and wheels. The vehicle is elaborately instrumented so that temperatures, brake pedal effort and pedal travel, brake fluid pressure and vehicle deceleration may be measured along the descent. Mr. Varin testified that he could not visualize a person intentionally descending a hill in that manner, a manner designed to evaluate the brake system under extreme conditions.[14] He further testified that tires do not normally melt or fail during this test, from which he concluded that temperatures at the outside flange of the wheel, where the wheel contacts the tire, do not reach the 300°F range.

Considerable trial testimony was directed to the issue of maximum temperatures likely to be experienced by the wheel overlay adhesive. Several significant factual issues arise in this regard, because the admitted high-temperature strength degradation of the adhesive used in the accused composite wheels is a focal point of the non-infringement defense here. It is therefore necessary to determine what high temperature-generating conditions are fairly to be considered part of "the normal useful life of the wheel," what temperatures are generated at those specific portions of the wheel that are covered by the adhesive pattern, and what are the relative contributions to overlay retention of the various portions of the

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[14] The Death Valley and Pike's Peak tests, also referenced during the trial, are evidently variations of this type of test.

adhesive pattern. That is, if portions of the adhesive pattern on the wheel are likely to experience temperatures that render them unable to provide sufficient retention strength, are there other portions of the adhesive that may be at a lower, less debilitating temperature, and that are capable of themselves retaining the overlay during those adverse conditions?

(b) Other Industry Specifications

Standards or specifications of other OEMs may provide additional appropriate criteria for evaluating the overlay retention capabilities of the adhesive during the normal useful life of the wheel. Reference was made at trial to impact tests specified by General Motors in connection with Hayes' development of wheels for the M-van. The impact test is a standardized structural test designed to evaluate the lateral or curb impact properties of the wheel by means of a laboratory test where the wheel and tire sidewall are struck once in a specified manner. The specified failure criteria are penetrating fracture through the center portion of the wheel, separation of the center portion from the rim, or total loss of air pressure within one minute after impact. According to Mr. Heck, GM required that the Hayes wheels for the M-van survive four hits at ninety-degree spaced locations, rather than the standard test of just one such hit. There was no explanation as to why the impact test specification was changed for this particular wheel. Because the Ford F-150 wheel was stipulated as representative for this lawsuit, and because impact testing was not required by Ford for that wheel, the Special Master finds that this M-van

wheel evidence is not relevant to a determination of the proper applicable performance standards.

Reference was also made to a Toyota heat resistance test, wherein lug nut-bolted wheel covers were subjected to four temperature cycles between room temperature and 280°C (536°F) in a laboratory set-up. The relevance of this test was discounted by Mr. Chase, because it was for removable wheel covers secured by the lug nuts, which potentially see that temperature at the lug nut area of the wheel, and because the test was "over-specified" in his opinion. While this evidence has some relevance to wheel temperatures at the lug nut area, it involves a different method of attachment, no doubt resulting in different heat exchange characteristics between the wheel and the wheel cover or overlay. Also, it is not known what conditions were being simulated by the Toyota test, or how those conditions relate to the conditions to which Ford's durability testing would subject the stipulated F-150 composite wheel. The Special Master therefore finds that this Toyota test evidence is entitled to little weight in determining the proper performance standards.

(c) Conduct of the Parties

Next, it is useful to consider the pre-litigation activities of the parties themselves with respect to their own product development histories. These activities may provide additional insight into the appropriate standards for the retention capability of the adhesive system employed on the accused wheels.

Because Lacks itself was not a wheel manufacturer, part of its initial development of the patented wheel

overlay system involved ascertaining what tests were appropriate to "validate" that system. These activities were described by Mr. Lee Chase, Lacks' director of advanced mechanical technology since about the late 1980's and the patentee of the '213 Patent. According to Chase, validation involved proving that the system "would hold up to the rigors of normal usage over perhaps a ten-year period."[15] Accordingly, Lacks sought input from wheel suppliers and automobile manufacturers ("OEMs") as to the appropriate parameters for testing the wheel overlays. Tests performed by Lacks included environmental cycling, tests to determine whether water would leak into and become trapped within the space between the overlay and the wheel, standard wheel tests such as rotary fatigue, radial fatigue and impact tests, and vehicle testing under city driving, Michigan winter and Death Valley conditions. Adhesive strength was also evaluated using peel and tensile tests.

Some of the initial performance standards suggested by the OEM's or self-imposed by Lacks proved to be "over-specified" in Chase's words, i.e., unnecessarily rigorous, particularly with regard to high temperature performance. This early cautious approach was necessitated by limited practical experience with an unproven new type of product, particularly because the Lacks overlay was made of plastic. As Mr. Chase testified:

> "During development, particularly on a product that's totally unique and new to the marketplace, you're doing all kinds of tests

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[15] Chase at 18.

because you don't know the potential failure mode of the product."[16]

Some of these early temperature performance goals were subsequently lowered. These standards and the nature of the tests will be described in more detail below. Mr. Chase described Lacks' extensive testing of the temperature levels and patterns on wheels under severe heat-generating conditions. Sixteen different vehicles were tested at Death Valley. Sophisticated instrumentation permitted temperatures at eight locations on the wheels to be measured at any speed. Initial test conditions for a 1993 Death Valley test specified by General Motors proved to be unrealistically severe. According to the specified test, a GMC Jimmy was fully loaded to gross vehicle weight, and a 2000-pound trailer was connected to it. The test called for the 5600-foot descent to be made in *neutral*, an ill-advised and unrealistic hill-descending driving condition where the engine would be disconnected from the driving wheels and therefore unavailable to aid the brakes in slowing the accelerating vehicle. The first trial was made in second gear to provide some engine braking. Excessive heats were not experienced and two different overlay materials passed. On the next trial, the vehicle was placed in neutral gear for the descent, as specified by GM, and the brakes were lost after five minutes because the brake fluid boiled. One of the two cladding samples blistered from the heat. For the next trial, the vehicle was put in drive gear and the brakes were dragged for the entire descent. After the heat soak period at the bottom of the hill, one of the overlays had

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[16] Chase at 87.

blistered over its entire face and the other material did not. All of these tests were performed with the 2000-pound trailer in tow.

Because of this early test experience, Lacks was sufficiently concerned that it directed its development efforts for the next two years to materials with extremely high temperature capability. But after talking with more OEMs and conducting much more testing, Lacks concluded that the GM test conditions were too severe. Lacks therefore went back to the Ford test plan, where the vehicle is loaded to gross vehicle weight (without a trailer), the transmission is kept in neutral and a minimum pressure is maintained on the brake system. The wheels passed those tests. At trial Chase testified:

> *"Lately Ford has backed down even on those requirements.* And we have an F-150 wheel that we test at Death Valley, which actually had some minor blistering in the hub area when we got through the soak period. *And Ford people bought that off because they knew that this was a very, very extreme test to check the safety systems of the vehicle, not an ornamental cladding. And they also knew that this is not something that you would see in the real world."*[17]

In December, 1994, for example, Lacks tested four different vehicles at Death Valley, using Ford's test procedure for brake fluid boil and brake conditions rather than GM's procedure. A Ford F-250 truck,

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[17] Chase at 929 (emphasis added).

Taurus, Escort and Crown Victoria, each fully loaded, and equipped with steel wheels, were driven down the fifteen-mile road, with grade levels of 6-10%. The vehicles were run in neutral at 35 mph, with a constant drag of at least 25 psi on the front service brakes. The peak wheel temperatures for the four different vehicles, reached during the stationary soak period at the bottom of the hill, ranged progressively from 324-477°F at the lug nuts, to 236-385°F at the intermediate spider portion, and to 209-262°F at locations at or near the outer rim.[18]

Chase testified that the Death Valley test does not compare with "real world" driving, because that type of terrain would have signs advising drivers to descend in a lower gear, and people would not be driving with combined conditions of gross vehicle weight, neutral gear and dragging their brakes for the entire descent. He reiterated that this OEM-specified test is extremely demanding because it is intended for brake performance, a matter of safety, rather than for mere ornamental appliques.

Chase considered a more realistic test for real world driving to be the Los Angeles city driving test, used by OEMs to evaluate brake wear. This is a test where vehicles are driven hard in stop-and-go traffic and through the hilly area surrounding that city, simulating taxi use, where the brakes get a lot of wear and generate a lot of heat. According to Chase, maximum temperatures might reach 250°F at the lug

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[18] The test data did not include rim temperatures for the Crown Victoria or F-250 trucks.

nut portion of the wheel, and not more than 200°F at the outer locations where the overlay is.

Defendants stress the higher temperature-resistance levels that Lacks sought to achieve at various times during its development program. For example, in 1992, Lacks sought an adhesive that would exhibit "operability through 400°F with ability to survive 600°F spikes." In August, 1996, after several years of testing, Lacks still thought that an adhesive with an operating range up to 450°F, with the ability to withstand 15-minute spikes at that temperature without degradation, "would be ideal." In October, 1996, Lacks sought an adhesive that would meet one of two sets of requirements: for Plan A (replace all silicone), spikes of 400°F for one-half hour, and retain 100 psi peel strength at that temperature; or, for Plan B (replace silicone outside of bolt circle), see spikes of 300°F for one-half hour, and retain 100 psi peel strength at that temperature.

In contrast to these early high-temperature performance objectives of Lacks, Chase testified that:

> "The experience that we have today has to deal with how the OEMs perceive our need to pass Death Valley testing. They backed way off on that requirement."[19]

Chase further testified that Lacks' Death Valley testing was primarily intended to evaluate the plastic overlay material's ability to withstand brake temperature build-up without deforming or blistering

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[19] Chase at 56. See also, Chase at 929, quoted above.

the chrome off the plastic. The effect upon the adhesive was of secondary interest by that time, because of Lacks' previously acquired knowledge from adhesive coupon testing and earlier Death Valley wheel temperature profiles testing.

The pre-production testing performed by McKechnie/Hayes on the accused F-150 truck wheel/overlay assemblies comprised Lord's coupon testing, Hayes' own rotary and radial fatigue tests, water immersion tests, and Ford's durability testing on the vehicle. Lord's coupon testing results of June, 1993 caused Lord to recommend to Hayes that Lord's higher temperature Fusor 380/382 epoxy adhesive be substituted for its 320/322 adhesive. Lord's subsequent coupon adhesion testing, in accordance with Ford's modified specifications, on Electro-coated hot rolled steel bonded to bright chrome stainless steel by Fusor 380/382 adhesive resulted in the conclusion that "[a]cceptable adhesion was obtained throughout all test conditions." As a result, in August, 1993, four prototype wheel/overlay assemblies were sent to Ford's Arizona Proving Grounds for corrosion testing, eight additional samples for durability testing at that proving ground, plus four more for high temperature durability testing at Davis Dam.

Based on the trial record, and assessment of the credibility of the witnesses, the Special Master finds that an adhesive for securing an overlay to a wheel "is itself capable of securing the overlay to the wheel during the normal useful life of the wheel," and therefore capable to "permanently secure" the overlay to the wheel, if it: (1) satisfies the specifications set forth on the Hayes engineering drawing for the accused F-150 wheel (Exh. 42) and (2) retains

sufficient retentive strength (without reliance on the mechanical locking system) to secure the overlay throughout Ford's vehicle durability testing, but with a modified upper temperature limit as discussed below.

With regard to the Ford durability testing conditions, the Special Master finds the record to be somewhat incomplete. There is no description of what type of corrosion testing is performed as part of such durability tests on the vehicle, or the other durability testing performed at the Ford's Arizona Proving Ground or how the temperatures experienced on a given vehicle's descent at Davis Dam compare to those experienced in the Death Valley descent.

On the subject of the appropriate extreme braking-induced wheel temperatures, Heck testified that brake hub temperatures can reach 1000°F from sustained braking conditions, and that wheel temperature at the central area where the lug nuts secure the wheel to the brake assembly may reach 600°F. Significantly, he agreed with Mr. Varin that braking-induced wheel temperatures are progressively lower at locations farther out from the wheel lug nut area and closer to the wheel rim, and he acknowledged that much of the adhesive pattern on the accused Hayes wheels was located around the outer, or cooler, perimeter of the wheel overlay. He testified that the amount of heat transferred by convection from the brake to the wheel depends upon design and closeness of portions of the brake to the wheel.

Mr. Heck also testified that he had witnessed a radial fatigue test that created sufficient heat to discolor the clear coat paint at the rim portion of the

wheel, from which he concluded that the temperature at that point was at least 350°F. The Special Master finds this testimony entitled to little weight because, according to his testimony, it was not a test on an accused wheel, the wheel was aluminum rather than steel, the test was run at higher than normal speed, and his knowledge of the paint discoloration temperature came from the paint supplier. Similarly, Mr. Heck's reliance upon a Ford document describing wheel temperatures (500°F at the wheel hub, 400°F at the intermediate spider portion and 300°F at the rim) during a brake test at Death Valley is entitled to little weight as to the specific temperatures that would be expected on the accused wheels, because the wheel had a conventional plastic wheel cover (secured by an unspecified system) rather than an adhesively bonded overlay, and there was no evidence as to what effect these differences might have upon the temperature profile of the wheel.

C. The Accused Composite Wheels

The evidence bearing upon whether the accused F-150 composite wheels are made by an infringing method is found in several sources: pre-litigation testing by or for McKechnie/Hayes, testing during the litigation by McKechnie, and testing during the litigation by or on behalf of Lacks. These tests include coupon testing, laboratory testing on the accused composite wheels, and vehicle durability testing by Ford. There is no evidence, however, of *vehicle* testing on the accused wheels with the mechanical lock component of the overlay retention system disabled and only the adhesive component of the overlay retention system operative.

The first category of testing is the coupon testing, necessary to establish compliance with Ford's standard adhesive specification, as modified by agreement among McKechnie, Hayes and Ford (Exh. 42 and 124). Coupon tests using Fusor 380/22 two-part epoxy adhesive were performed by the adhesive supplier, Lord, and relied upon by Hayes to establish compliance with Ford's modified specification.[20]

These tests included shear adhesion strength under various temperature, high humidity, water immersion, thermal cycling and cold slam conditions. As reported by Lord, the test "conclusions" were that "[a]cceptable adhesion was obtained throughout all test conditions."

With regard to the high temperature shear adhesion strength, the subject of so much testimony in this lawsuit, at the Ford-approved reduced temperature of 177°C (351°F) (as modified from 204°C/400°F), five samples of the Fusor 380/322 surpassed the normally specified high temperature strength by an average factor of more than two-to-one.[21] For comparison, even under the unrealistically severe Death Valley hill descent conditions of Lacks' 1994 wheel temperature profile tests performed on four different vehicles, the range of the temperatures reached at the intermediate spider portion of the wheels was 236-385°F, while the range of temperatures at or near the outer rim was

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[20] Exh. 322, undated, but supplied by Hayes in discovery.

[21] The required shear adhesion strength at 204° C is 43.5 psi. At the Ford-approved modified high temperature test level of 177°C, the five specimens reached 65, 97, 98, 101 and 121 psi, for an average of 96 psi.(Exh. 322)

209-262°F (Exh. 625). Lacks' expert witness Varin testified that the coupon test result of 96 psi shear adhesion strength was, in his opinion, enough to retain the cladding to the wheel during normal vehicle operation. He further testified that if an entire vehicle wheel ever got to the 351°F temperature of that coupon test, the tire would be melting. He could not visualize a vehicle being operated under that wheel temperature condition, let alone as part of its *normal* life. He also testified that under real-world conditions where a wheel overlay was being subjected to separation forces, the outermost ring portion of the adhesive pattern would contribute a greater portion of retentive strength than the inner ring portion, both because it has more adhesive area than the inner ring and because it would be running at a lower temperature and therefore retain more of its strength.[22]

Based on the available evidence, the Special Master finds that it is unlikely that the entire wheel would ever reach a temperature of 351°F during the normal use life of the wheel. The Special Master further finds that, even in that unlikely event, the Fusor 380/382

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[22] Varin at 382-385. The adhesive pattern on the wheel, shown in Exh. 42, comprises two concentric rings on the wheel face, an outer one near the rim and an inner one on the spider portion outside of the lug bolt circle, plus a pattern of N-shaped generally radial stripes between each of the wheel openings or "windows." All of these adhesive lines are of substantially the same width. A simple measurement of the relative lengths of the various portions of the adhesive pattern on that drawing reveals that the relative lengths of the adhesive patterns is about 12.2 for the outer ring, 6.3 for the inner ring, and a combined total of 28.8 for all of the N-shaped portions on the intermediate spider portion that connects the two ring portions.

adhesive used in the accused wheels would retain sufficient strength to retain the overlay. These findings are based on the documentary exhibits concerning wheel temperature profiles during Lacks' Death Valley testing, and the credible testimony of witnesses Chase and Varin concerning the extreme nature of those tests relative to real world, normally contemplated, driving conditions.

Defendants challenge the significance of the coupon test results because the Ford adhesive specification against which the test results were measured was designed for fiberglass-to-fiberglass or fiberglass-to--metal, not for metal-to-metal applications. While Defendants are correct concerning the original intended application of that Ford specification, it must be remembered that the adhesive supplier (Lord), the wheel manufacturer (Hayes) *and the customer* (Ford) all approved the use of that specification, *as modified*, as one part of the conditions that the accused composite wheels had to satisfy. Furthermore, the original, unmodified, Ford adhesive specification itself cautions: "Compliance with this performance specifications does not guarantee the structural adh[esive will] function for all potential applications on a vehicle. The specific design condition [should be] evaluated by a plant trial or laboratory simulation prior to release of the material."[23] The Special Master

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[23] Exh. 124. Note that the bracketed portions of this quoted excerpt are the Special Master's own interpolations to supply portions of the text that were cut off at the right margin of the photocopied document that was placed in evidence. Upon request following the trial, the parties were unable to supply a copy that included more of the text than is included above. The bracketed

finds that the vehicle durability testing and laboratory simulation testing (i.e., rotary and radial fatigue tests) described elsewhere herein serve to supply the supplementary evaluation recommended by the quoted caveat.

Defendants also challenge the coupon test results as inadequate because they were conducted on mere coupons, not on actual wheels. In this regard, Defendants stress that the coupon tests do not test the adhesive under simultaneously occurring adverse environmental conditions. Defendants note that even Mr. Chase of Lacks admitted that he would not rely on coupon or laboratory tests alone to conclude whether an adhesive would permanently secure the overlay to the wheel. This challenge overlooks the fact that the coupon and other laboratory tests were a part of the specifications approved by Lord, Hayes and customer Ford, and are therefore properly to be included *as a part* of the relevant evidence to be considered on the issue of infringement.

Even more fundamentally, Defendants assert that the adhesive used in the accused wheels fails at 400°F and therefore cannot survive the expected hostile thermal environment. In this regard, Defendants assert that Lord deliberately modified the Ford spec to 350°F because it knew that the adhesive would fail at Ford's originally specified 400°F. This assertion fails for several reasons. First, for the reasons previously stated, 400°F is not the appropriate temperature to use for evaluating the ability of the adhesive pattern

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suggested insertions appear to be consistent with the available text and purpose of the document as a whole.

in the accused wheels to itself permanently secure the overlay to the wheel during the normal useful life of the wheel. Second, the reduction in the specified temperature for the elevated temperature coupon strength test was not some nefarious scheme of adhesive supplier Lord; it was a three-way decision made by Lord, Hayes itself and a materials engineer from Ford, the customer.

Returning to the coupon tests results of Exhibit 322, all of the five specimens passed the various tests, including room temperature tests, minus 40°C (minus 40°F), fourteen days at 90°C (194°F), fourteen days at high humidity, fourteen days of water immersion and ten thermal cycles. Each of these tests required shear adhesion strength of 406 psi, and the five specimens achieved average results of 2234, 2048, 2412, 2319, 2375 and 2649 psi, respectively.

The Special Master finds that the accused wheels satisfy the requirements of Note 14 on the engineering drawing (Exh. 42), namely: "Adhesive (Fusor 380/82) to conform to [the Ford Adhesive Specification, with enumerated exceptions]."

The required performance standards for the accused wheels, as specified by Exhibit 42, also included the cornering fatigue test and radial fatigue test. As previously noted, these are standard industry tests conducted under simulation conditions in a laboratory to evaluate the wheel's structural integrity. Hayes witness Heck acknowledged that these two tests were among the tests Hayes used to obtain approval of the accused wheels and to evaluate the ability of the overlay to remain attached during the service life of the wheel. The usefulness of these standard laboratory

wheel tests for evaluating the retention capability of the adhesive is further buttressed by Hayes' reference to them in its Failure Mode and Effects Analyses ("FMEA's), prepared as a routine part of its product development and production procedures. A series of these FMEA's covering cladded wheels for various vehicles list, as possible causes of skins falling off, incorrect groove design, incorrect adhesive specification or topcoated bonding surface causing less than adequate bonding strength between the skin and wheel. Listed "current design controls" for this possible problem are to conduct radial and rotary fatigue impact testing and customer vehicle durability testing.

In the fall of 1999, Lacks purchased a number of new, unused Hayes-manufactured, stainless steel-clad, steel Explorer wheels from Ford and Lincoln Mercury dealerships and shipped them to Smithers Laboratories ("Smithers") in Ohio for rotary fatigue, radial fatigue and impact testing. According to Lacks' expert witness, Mr. Varin, who observed a portion of those tests in progress, Smithers is widely recognized as being competent in that field. Varin was familiar with that type of wheel testing from his experience as a Ford engineer, and testified that Smithers followed the applicable SAE test procedures (Exhs. 348, 349) in all material respects except that the test loads applied to the wheels were in excess of those that would normally be applied for the rating of that particular wheel model. Significantly, as described in Smithers' written test reports:

> "The wheels were prepared for the testing program by *disabling the mechanical retention feature of the cladding* by machining the cladding at the flange curl and removing the

portion of the cladding that created the interference fit."[24]

Sixteen wheels were tested, six on each of the rotary and radial fatigue tests and two on the impact tests. Smithers' written test reports conclude that all of the sixteen tested wheels passed the tests, with the exception of one radial fatigue test that was prematurely stopped due to tire failure, and that the stainless steel cladding was still firmly attached to the wheels following conclusion of the tests.[25] Mr. Varin also examined the wheels after testing was completed and found no sign of distress or shifting of the cladding, and he was unable to remove the cladding by prying with a small tool.[26]

Based upon Smithers' tests on Hayes' composite Explorer wheels, as illuminated by Varin's testimony, the Special Master finds that the accused wheels fulfill the applicable rotary and radial fatigue testing requirements (and, in the case of the Explorer wheels, impact testing as well), and that it was the adhesive alone that secured the cladding, without any contribution from the disabled mechanical retention feature.

Defendants' challenge to the Smithers tests is directed to the fact that they were conducted at room temperature, that the tests were performed on brand new wheels that had never been exposed to heat or

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[24] Exh. 346 (emphasis added). See also Exh. 347.

[25] *Ibid.*

[26] Varin at 310-12, 379-80.

other hostile environmental forces and that no formal pull-off testing (i.e., other than Varin's hand-test) was conducted following the tests. As to the room temperature challenge, the SAE test procedure for the impact test specifically states that "[t]he test should be conducted at room temperature," while the SAE test procedure for the rotary and radial fatigue tests has no procedural instruction concerning the temperature at which the tests are to be performed and Defendants offer no evidence contradicting Mr. Varin's testimony that those tests followed the applicable SAE procedures. As to the testing of brand new wheels, the applicable SAE procedures for all thee tests explicitly require that "[o]nly fully processed new wheels" be used for each test." As to the absence of a "formal" pull-off test following Smithers' various tests, there is no requirement, either as part of the SAE procedures for the Smithers tests or elsewhere in the Lord/Hayes/Ford-approved series of tests, that any form of pull-off test, formal or informal, be performed. Once again, Smithers' industry-accepted tests challenged by Defendants as inadequate are only part of the series of previously discussed specifications mutually agreed upon by Lord, Hayes and Ford, no one of which specifications or tests can, or is intended to, permit a full evaluation of the performance of an adhesive retention system. The Special Master finds no merit to Defendants' challenge to the Smithers tests as a relevant part of the infringement analysis.

Lacks also refers to Defendants' own tests as further evidence of the ability of the adhesive in the accused composite wheels to permanently secure the overlay or cladding to the wheel. The first such test is a pull-off test performed by McKechnie in November, 1997. The first objective of the test was to determine

the relative contributions to the cladding retention system made by the mechanical locking feature at the rim flange of the wheel and the "sealant/adhesive."[27] Several versions of the M-Van clad wheels were tested. Of particular interest were the comparative tests run on three different versions of that wheel: the Sample A group of five wheels had Hayes' standard production combination of the Fusor 380/382 adhesive plus the mechanical lock; the Sample B group was the same as Sample A, but with the mechanical lock disabled by machining off the outer edge of the cladding so that it no longer engaged the groove in the wheel rim; and the Sample G group had the standard mechanical lock but no adhesive.

The central hub portion of the wheel, where the lugs would normally come through, was machined off each of the wheels, without disturbing the cladding. A disc-shaped clamping mechanism was secured to the inner diameter of the cladding and connected to a tensile testing machine that was arranged to pull the cladding straight outward in an axial direction, away from the surface of the wheel. The machine measured the pulling force versus the distance of displacement of the clamped inner part of the cladding from its original position on the wheel surface.

The pattern of deformation of the cladding as it was pulled away from the wheel surface in this particular type of test is revealed by a series of photographs

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[27] Exh. 313, p. 2.

included in the test report.[28] Initially, in Sample A that had both adhesive and the mechanical lock, the separation of the adhesive bond and outward displacement of the cladding was confined to that inner circle, where the pulling mechanism is clamped to the cladding. The maximum load occurred during the initial separation, when the full inner ring of adhesive was being broken. The inner annular surface of the initially separated portion of the cladding retained its orientation essentially parallel to the plane of the wheel face as it moved away from the wheel. But as the separation progressed into the wheel spider area, where the adhesive pattern is in the form of N-shaped radial lines between each wheel window, the thin-walled cladding began to substantially deform. The cladding progressively peeled away from the wheel face in a separation zone that is a circle of increasing diameter. The cladding turned inside-out as its shape changed from its original concave cone-like form to an increasingly elongated convex cone-like form. The pulling force dropped substantially as the cladding progressively peeled away from this spider portion of the adhesive pattern, until the separation zone reached the outer adhesive ring and the mechanical lock, when the force temporarily rose somewhat until separation was complete.

In the Sample B group, having the adhesive but no mechanical lock, the initial high load and separation pattern was similar, but with progressive separation, there was not the complete inversion of the cladding, and the force did not significantly rise again at the

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[28] Exh. 313. See also, Hogan at 267-81 and Varin at 365-66 and 382-85.

final phases of separation of the outer portion of the cladding.

In the Sample G group, with the mechanical lock but no adhesive, the pattern was completely different. The cladding did not turn inside-out. The load gradually increased from a very low level until the cladding deformed enough to slip out of the retaining groove in the wheel rim.

The McKechnie report of these pull-off tests reached these conclusions:

> "[It can be concluded that the mechanical locking feature which traps the circumference of the cladding into an undercut in the wheel is a sufficient retention system on its own. An average load of 1700 lbf. was required to remove claddings from the wheels with no sealant or adhesive system. All customer specifications require less than 100 lbf. on detachable wheel trim. Some specifications go as low as 20 lbf. The fact that the cladding had to be permanently deformed to remove it, even without sealant or adhesive, indicates a robust retention system. All sealants and adhesives tested only increased the effort required and increased the deformation required to remove the claddings."[29]

Not commented upon in these conclusions is the fact that the load to pull off the five specimens secured with only the Fusor 380/382 adhesive (Group B)

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[29] Exh. 313, p. B006869.

averaged 4083 pounds, more than twice that required to pull off the samples secured only by the mechanical lock. Thus, the performance of McKechnie's adhesive retention system in these McKechnie-run comparative tests, with the mechanical lock feature removed, dramatically exceeded a level that McKechnie described as both "a sufficient retention system on its own" and "a robust retention system."[30]

It should be noted that, according to the testimony of Lack's expert Varin and McKechnie-witness Heck, this series of comparative pull-off tests was not designed as a durability test or simulation of any particular type of removal force that would be encountered in the field. Nevertheless, the test was an attempt by McKechnie to perform a consistent type of destructive test to evaluate the relative strengths of its two retention system components. Therefore, the Special Master finds that McKechnie's own contemporaneous written conclusions, in conjunction with the testimony of Varin, are probative of a conclusion that, at least in this particular pull-off test devised by McKechnie, the accused adhesive retention system "contributes the vast majority of the resistance to removal of the cladding [and the] mechanical attachment does not contribute more than a relatively small fraction of the resistance."[31]

These McKechnie test results provide additional enlightenment relevant to the "permanently secure"

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[30] The results for the tests on the five specimens that were secured with both the Fusor 380/382 adhesive and the mechanical lock (Group A) averaged a load of 4498 pounds.

[31] Varin at 319. See also, Varin at 321.

issue. They offer insight into the relative retention contributions of the inner and outer rings of the accused adhesive pattern, a consideration made significant here by Defendants' stress on the adhesive's strength decline under severe braking-induced high wheel temperatures. As previously discussed, the wheel temperature profile under those conditions places the highest, strength-impairing, wheel and adhesive temperatures at the inner ring of the accused adhesive pattern. But at the radially outer portions of the wheel, where the outer adhesive ring is located, the adhesive is exposed to maximum temperatures of only 200-260°F during the "normal useful life of the wheel," as discussed above. Furthermore, the adhesive of the outer ring would not, in a real-world condition, be subjected to peel-off type separation forces resulting from severe cladding deformation, as in the McKechnie pull-off tests, but would be subjected to a removal force where the cladding would remain parallel to the wheel surface as it tends to separate (as in the case of the central portion of the cladding in the McKechnie pull-off tests).

As explained by Varin:

> "And under those [in the field] conditions, the outermost ring would be by far the stronger of the two rings, both by virtue of its increased area and by virtue of the fact it's probably running at a lower temperature. So these [McKechnie] pull-off tests very seriously understates the strength of the outermost ring, because the way that ring of adhesive is being

pulled apart is not representative of the way it would be stressed during a vehicle operation."[32]

McKechnie performed additional comparative pull-off tests on its own product in 1998. The test technique appears to have been comparable to that used for the 1997 tests of Exhibit 313, but this set of tests is of particular interest because each tested wheel specimen had previously been subjected to a durability cycle that included several adverse environmental conditions. Defendants have challenged much of the other test evidence relied upon by Lacks as entitled to little weight because those tests were performed on new wheel specimens that had not suffered the detrimental effects of other adverse conditions, thereby failing to realistically simulate the combined adverse conditions to which vehicle wheels would be subjected during their normal useful life. McKechnie designed this 1998 test procedure "to evaluate the integrity of sealants [i.e., the adhesive/sealant] in DuraClad assemblies when subjected to extreme combinations of temperature, vibration, and corrosion."[33] The test report, prepared during the current litigation, states that "[a]dhesion between the cladding and the wheel is the secondary function of the sealant."[34] But the test results suggest otherwise. The preliminary tests included multiple cycling between temperature extremes of 360-390°F (maximum wheel temperature) and minus 40°F; a Belgian Block simulation of rough road-induced

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[32] Varin at 384-85.

[33] Exh. 318, p. B006905.

[34] *Ibid.*

vibration; and a salt spray bath corrosion test. Other than some corrosion on the wheel itself, there was no observed deterioration in the retention system. In the subsequent pull-off test, the specimen with only the mechanical lock retention component required nearly 800 pounds of force to remove the cladding, whereas the specimen that used only a two-part epoxy sealant/adhesive for retention required 1500 pounds of force to break the initial bond (presumably at the inner ring of the adhesive pattern).[35]

The Special Master finds this McKechnie-designed test of its own products to be particularly probative because it demonstrates that, for whatever significance that Defendants attach to the detrimental effects of combined adverse conditions on the retention system, and for whatever relevance the particular type of pull-off test employed has to real-world separation forces, the two-part epoxy adhesive demonstrated retention capability superior to the mechanical lock that Defendants assert to be the sole basis of permanent retention of their cladding in the accused composite wheels.

Defendants rely upon a December, 1993 incident to demonstrate that the adhesive on a Hayes prototype wheel did not survive Ford's vehicle durability testing. Ford's tests were only generally identified by Heck as including corrosion testing, under a variety of adverse environmental conditions, and structural and power train testing. One of sixteen prototype samples sent to Ford for testing was returned and "sectioned," i.e., cut apart by Hayes for inspection. According to a

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[35] *Id.* at p. B006908.

contemporaneous Hayes memorandum, "[i]nspection indicated the glue was mainly not adhering to the chrome skin."[36] Another contemporaneous Hayes memorandum stating that "[t]he glue is no longer a primary retention item . . . [t]herefore how well the glue holds is no longer an issue.[37] Defendants now rely upon this incident as further support for their contention that it is the mechanical lock, not the adhesive, that permanently secures the cladding in the accused wheels. They assert that the adhesive continues to be used because of its valued function as a sealant to prevent entry of moisture and dirt between the cladding and wheel face and as a sound-deadening device.

The Special Master does not find this isolated event involving one of sixteen tested prototype wheels, the limited documentation and the related testimony of Hayes witnesses to be entitled to substantial weight. There are too many uncertainties surrounding this event concerning a single pre-production prototype wheel: (1) the lack of specific information about the nature of the Ford tests on this wheel, (2) the possibly destructive contribution of Hayes' cutting apart of the wheel to the condition of the adhesive bond, (3) other possible contributing causes mentioned in the same memorandum that described the incident ("the wrong paint and soft skins"), and (4) the possible remedial effect upon the strength of the adhesive bond of various steps suggested in that memorandum (i.e., preventing the rear side of the cladding from being

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[36] Exh. 677, ¶3.

[37] Exh. 676, ¶3.

chromed, so as to improve adherence, and steps to prevent rebounding of the skin away from the wheel during assembly).

Other contemporaneous Hayes documents are inconsistent with this contended sealant-only role of the adhesive. Lacks points to pre-litigation writings of Hayes engineer Heck, co-patentee of U.S. Patent No. 5,435,631, entitled "Vehicle Wheel Cover Retention System," and assigned to Hayes. Heck testified that his invention disclosure for that patent was written in August, 1993, before he learned of any of the December, 1993 results of Ford's durability testing on the accused F-150 wheel prototypes. However, the patent application was filed on filed February 28, 1994, and presumably read and signed by Heck after December, 1993. The claims of this patent are directed to the previously described mechanical retention groove/lip construction, and the specification includes the following additional description (with emphasis added):

> "The groove functions, in part, to hide a peripheral edge of the cover. Preferably, *an adhesive material is applied* to the outboard facing wheel surface of the disc, and the cover is then pressed against the adhesive covered [sic] *to permanently secure* the wheel cover to the disc." (col. 1, lines 54-59)

> "In order *to permanently secure* the cover 16 to the disc 14, an adhesive 70, such as *a two-part epoxy, is utilized*. A suitable epoxy is FUSOR 380/382 manufactured by Lord Corporation." (col. 3, lines 56-59)

> "*The adhesive 70 functions to permanently secure* the cover 16 to the disc 145. Also, since the adhesive 70 covers substantially the entire interface between the cover 16 and the disc 14, it is effective to provide a seal and prevent water, mud, and other debris from entering between the cover 16 and the outboard facing surface of the disc 14." (col. 3, line 68-col. 4, line 6)

Heck also authored an article, written in May, 1995 and published in 1996, entitled "Clad-Covered Wheels." The article illustrates and describes the same cladding retention system, comprising the use of adhesive as well as the mechanical lock formed by the groove and lip. After stating that the cladding is adhesively bonded and mechanically locked to the wheel, the article continues: "This two-part adhesive has two functions: it bonds the cladding to the wheel, and it acts as a sealant to prevent moisture from penetrating the cladding bond."

Hayes attempts to rationalize this apparently contradictory statement, written several months after delivery of production F-150 wheels to Ford had begun, by Heck's testimony that (1) he knew at that time that the adhesive would not *permanently* bond the overlay (because of the previously described December, 1993 incident), but (2) he still believed that it provided a bond to function as a sealant. After consideration of all these documents and testimony concerning the December, 1993 incident and the Heck publications, the Special Master finds the incident to be entitled to little weight in view of its incompleteness, contradictions and limited relevance to the performance of the accused production wheels manufactured and sold after the January 28, 1997

issuance of the patent-in-suit. The Special Master finds other isolated incidents relied upon by Defendants to suffer from similar weaknesses and to be even less persuasive.

Defendants assert that even if the Remaining Claims of the '213 Patent literally read on the accused wheels, infringement is avoided because they function in a substantially different way. This argument is the so-called "reverse doctrine of equivalents," finding support in *Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co.*, 339 U.S. 605, *reh'g denied*, 340 U.S. 845 (1950):

> "The wholesome realism of [the doctrine of equivalents] is not always applied in favor of a patentee but is sometimes used against him. Thus, where a device is so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way, but nevertheless falls within the literal words of the claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee's action for infringement."

339 U.S. at 607-08. *See also, Westinghouse v. Boyden Power Brake Co.*, 170 U.S. 537, 568 (1898).

Defendants' position is based on the premise that its overlay is retained by a snap-fit mechanical lock that is the primary, if not sole, means of retention. The weight of the evidence is overwhelmingly to the contrary. The Smithers tests demonstrate that with Defendants' mechanical lock disabled, the adhesive alone was capable of securing the overlay during the

required rotary and radial fatigue tests. Thus, Defendants' accused wheels are made by a method that includes all of the steps of the Remaining Claims, with each of the steps performing the same function and generating the same result as specified in the claims. Even Defendant McKechnie's own November, 1997 pull-off tests, for whatever relevance they had to real-world conditions, demonstrated that the adhesive alone had more than twice the pull-off resistance to that provided by the mechanical lock alone, the latter resistance being described by McKechnie as both "a sufficient retention system on its own" and "a robust retention system." To the same effect were McKechnie's 1998 tests, where the adhesive alone demonstrated superior retention capability to the mechanical lock alone.

The evidence shows that Defendants' adhesive also serves to seal out moisture and debris, a function explicitly called for by asserted claims 12, 13 and 25.

Therefore, the Special Master finds that the presence of Defendants' mechanical lock, however beneficial and useful it may be, is irrelevant to the issue of infringement. The mechanical lock does not change the retention and sealing functions of Defendants' adhesive; it does not cause the method employed to assemble the accused composite wheels (or the resulting wheel assemblies) to function in a substantially different way or according to a different principle. The mechanical lock is simply one more element or step employed in the accused method, in addition to the presence of each and every step specified in the Remaining Claims of the '213 Patent. It "is fundamental that one cannot avoid infringement merely by adding elements if each element recited in

the claims is found in the accused product. . . . Any other reasoning would allow an infringer to avoid infringement merely by adding additional elements to an infringing device." *SunTiger, Inc. v. Scientific Research Funding Group*, 189 F.3d 1327, 1336 (Fed. Cir. 1999). As noted in *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1123, n.19 (Fed. Cir. 1985) (*en banc)*:

> "Because products on whch patent claims are readable word for word often are in fact the same, perform the same function in the same way, and achieve the same result, as the claimed invention, a defense based on the reverse doctrine of equivalents is rarely offered."

The reverse doctrine of equivalents defense has no merit here, for the reasons explained above.

The Special Master concludes that, if the claims are valid, Lacks has proven by a preponderance of the evidence that Defendants literally infringed claims 11-13, 20, 24 and 25 of the '213 Patent. Based upon Lacks' post-trial concession, there is no infringement of claims 21-22.

III. INVALIDITY

A. Introduction

The statutory "presumption of validity" requires that "[e]ach claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims." 35 U.S.C. §282. As with any defense of patent

invalidity, it is the patent challenger's burden to show invalidity of each claim by clear and convincing evidence. *North American Vaccine v. American Cyanamid Co.*, 7 F. 3d 1571, 1579 (Fed. Cir. 1993).

Defendants contend that the Remaining Claims are invalid under 35 U.S.C. §102(b), which provides that an inventor forfeits the right to a valid patent if the claimed invention "was in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States." Specifically, Defendants contend that Lacks and Defendants, each independently, placed the claimed invention "on sale," and that Defendants' prototype F-150 wheels were in public use more than one year prior to the June 6, 1995 filing date of the '213 Patent. Thus, it is necessary to evaluate the nature of both sets of independent activities that preceded the June 6, 1994 "critical date."

The policy behind the on-sale "statutory bar" to patentability illuminates the interpretation of the applicable case law and guides the analysis of the facts:

> "[T]he 'on sale' bar has the following underlying policies: (1) a policy against removing inventions from the public domain which the public justifiably comes to believe are freely available due to commercialization; (2) a policy favoring prompt and widespread disclosure of inventions to the public; and (3) a policy of giving the inventor a reasonable

> amount of time following sales activity to determine whether a patent is worthwhile."

In re Caveney, 761 F. 2d 671, 676 (Fed. Cir. 1985).

As the Supreme Court concluded in *Pfaff v. Wells Electronics, Inc.*, 525 U.S. 55 1998), "It is a condition upon an inventor's right to a patent that he shall not exploit his discovery competitively after it is ready for patenting; he must content himself with either secrecy or legal monopoly." *Id.* at 68 (quoting from *Metallizing*). "Any attempt to use it for profit and not by way of experiment, for a longer period than [allowed by statute], would deprive the inventor of his right to a patent." *Id.* at 65 (quoting from *Elizabeth v. Pavement Co.*). Foremost among the policy considerations that underlie Section 102(b) is "the policy of preventing inventors from exploiting the commercial value of their inventions while deferring the beginning of the statutory term [citation omitted]. To this end, the inventor is strictly held to the requirement that he file his patent application within one year of any attempt to commercialize the invention." *Ferag AG v. Quipp, Inc.*, 45 F.3d 1562, 1566 (Fed. Cir. 1995).

To satisfy the experimental use exception to Section 102(b), it must be shown that the inventor kept control over the invention during its testing, and that the primary purpose was to perfect the invention, rather than for commercial exploitation. *Paragon Podiatry Laboratory v. KLM Laboratories*, 984 F.2d 1182, 1187 (Fed. Cir. 1993). Furthermore, "'testing' of a device to determine suitability for a customer's particular (unclaimed) need is not experimental use which negates commercialization by the inventor." *LaBounty*

Mfg. v. U.S. Int'l Trade Comm'n, 958 F.2d 1066, 1074 (Fed. Cir. 1992). And "the experimental use exception does not apply to experiments performed with respect to nonclaimed features of an invention." *RCA Corp. v. Data General Corp.*, 887 F.2d 1056, 1061 (Fed. Cir. 1989).

The criteria for establishing an "on-sale" defense were recently modified by the Supreme Court's decision in *Pfaff*:

> "We conclude, therefore, that the on-sale bar applies when two conditions are satisfied before the critical date. *First, the product must be the subject of a commercial offer for sale.* An inventor can both understand and control the first commercial marketing of his invention. The experimental use doctrine, for example, has not generated concerns about indefiniteness, and we perceive no reason why unmanageable uncertainty should attend a rule that measures the application of the on-sale bar of Section 102(b) against the date when an invention that is ready for patenting is first marketed commercially. In this case the acceptance of the purchase order prior to April 8, 1981, makes it clear that such an offer had been made, and there is no question that the sale was commercial rather than experimental in character.
>
> *Second, the invention must be ready for patenting.* That condition may be satisfied in at least two ways: by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared

> drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention.

Id. at 67 (emphasis added).

"Public use" under Section 102(b) is any use of the claimed invention by a person other than the inventor who is under no limitation, restriction or obligation of secrecy to the inventor. *In re Smith,* 714 F.2d 1127, 1134 (Fed. Cir. 1983).

B. Defendants' Alleged On-Sale and Public Use

Defendants assert that they themselves placed the invention of the Remaining Claims on sale to Ford and others, and made public use thereof, prior to the June 6, 1994 critical date. Lacks' principal challenge to that defense is that Defendants have failed to prove, by the required clear and convincing evidence standard, that the offered composite wheels included one feature of the claimed invention prior to the critical date. That challenge is directed both to the date when that feature was ultimately added and to the lack of legally required corroboration of the oral testimony of three Hayes witnesses. A secondary challenge by Lacks is that Defendants' admitted transactions with Ford were in the nature of a legally permissible experimental use rather than a patent-invalidating "on sale" or public use of the claimed invention.

1. The Challenged Claim Limitations

For convenience, the relevant sub-paragraphs of independent claims 11 and 25 are reproduced below, with the challenged limitations highlighted:

> Claim 11. . . . selectively depositing a curable adhesive on at least one of said inboard and outboard surfaces such that said curable adhesive is between said overlay and said wheel upon assembling said overlay with said wheel, ***said curable adhesive being deposited in an amount that is insufficient to entirely fill said gap;*** and
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> assembling said overlay to said outboard surface of said wheel with said curable adhesive so as to form said gap and permanently secure said overlay to said wheel, ***at least one void being present between said overlay and said outboard surface of said wheel.***
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> Claim 25. . . . assembling said overlay to said outboard surface of said wheel with said curable adhesive so as to form said gap and permanently secure said overlay to said wheel, ***at least one void being present between said overlay and said outboard surface of said wheel, said at least one void entrapping air between said overlay and said wheel.***

The specification and drawings of the '213 Patent disclose the adhesive as being selectively deposited in linear beads or strips 30 surrounding each lug bolt opening 28 and each window opening 24 and a circumferential bead near the outer perimeter of the overlay, to "prevent the ingress of water and dirt between the overlay 16 and the wheel 10."[38] Continuing:

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[38] Col. 6, lines 54-55.

"Notably, significant portions of the interior of the outboard surface are not covered by the adhesive 30, such that large voids are present between the overlay 16 and the wheel 10 as a result of the overlay 16 being axially spaced apart from the outboard surface by the adhesive 30 for a purpose hereinafter to be disclosed."[39]

The '213 Patent specification describes the purposes and advantages of partial adhesive coverage:

"Another significant advantage of this invention is that the curable adhesive can be deposited such that only a portion of the gap between the overlay and wheel is filled. As a result, one or more voids are present between the overlay and the outboard surface of the wheel. As discussed above, such a capability, though unexpected, enables the permanent adhesive to be selectively deposited to achieve any one or more refinements to the overall manufacturability, performance, and consumer-perceived quality of the wheel assembly. For example, the permanent adhesive can be applied only to the extent necessary to exclude moisture and dirt from the gap between the overlay and wheel. The resulting void can serve as a reservoir for air or moisture laden air for air-cured and moisture-cured adhesives, thereby improving the cure rate of the adhesive. The permanent adhesive can also be deposited in order to manage thermal conduction between the wheel and overlay, tailor the acoustical

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[39] Col. 6, lines 58-64.

characteristics of the wheel assembly, accommodate tolerance variations between the wheel and the overlay and effect the balance of the wheel. Finally, the use of less adhesive also serves to reduce the weight and the material as well as the overall manufacturing costs of the wheel assembly."[40]

2. Defendant's Pre-Critical Date Ford F-150 Wheels

There is no dispute that the adhesive coverage on the accused F-150 wheels shipped by Defendants after December, 1994 was in accordance with the patent claims. But those shipments began *after* the June 6, 1994 critical date. The dispute therefore focuses on the extent of the adhesive coverage on Defendants' prototype wheels before the critical date. Lacks asserts that it was not until three months after the critical date that Defendants decided to use partial rather than complete adhesive coverage, and that there was therefore no pre-critical date on-sale or public use of the *claimed* invention.

To satisfy their burden of proof on this defense, Defendants rely on the testimony of three of their own employees (Heck, Maloney and Beam) and certain Hayes documentation. No testimony or documentation from any other source supports Defendants' own evidence. Here, even the documentation is incomplete, ambiguous or contradictory.

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[40] Col. 13, lines 11-32.

Over one hundred years ago, the Supreme Court noted that testimony concerning invalidating activities can be "unsatisfactory" due to "the forgetfulness of witnesses, their liability to mistakes, their proneness to recollect things as the party calling them would have them recollect them, aside from the temptation to actual perjury." *The Barbed Wire Patent*, 143 U.S. 275, 284 (1891). A long line of cases on this subject was recently summarized in *Finnegan Corp. v. ITC*, 180 F.3d 1354, 1366-68 (Fed. Cir 1999):

> "Mere testimony concerning invalidating activities is received with further skepticism because such activities are normally documented by tangible evidence such as devices, schematics, or other materials that typically accompany the inventive process [case citations and quotes omitted].
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> * * * *
>
> Moreover, the need for corroboration exists regardless whether the party testifying concerning the invalidating activity is interested in the outcome of the litigation (*e.g.*, because that party is the accused infringer) or is uninterested but testifying on behalf of an interested party. That corroboration is required in the former circumstance cannot be debated.
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> * * * *
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> In the final analysis, the Supreme Court has defined the necessity of corroboration not with reference to the level of interest of the testifying witness, but rather because of doubt that testimonial evidence alone in the special context of proving patent invalidity can meet the clear and convincing evidentiary standard to invalidate a patent."

Here, the witnesses testified that the adhesive was applied in accordance with the pattern shown in Figure 2 of Hayes' previously mentioned '631 Patent, and Defendants rely on this patent disclosure to corroborate their testimony concerning conception and reduction to practice prior to the June 6, 1994 critical date. A copy of that drawing (Exh. 129) is reproduced in the Appendix hereto.[41] That pattern comprises a circular bead near the outer perimeter of the overlay, an inner circular bead just outside the circle of lug bolt holes, and a series of three generally radial bead lines between each of the wheel windows and joined at their ends to the two circular bead lines.

Hayes engineer Maloney testified that he was responsible for the assembly of the prototypes prepared for Ford's Arizona Proving Grounds during April-June, 1993. Maloney and Heck, the co-patentees on Hayes' '631 Patent, and Beam[42] observed the prototype assembly. According to their testimony, the adhesive was applied in accordance with the illustrated pattern, although they also noted that some of the development work during that period had two rather than three radial beads between each wheel window. The cladding was removed from one of these assembled wheels and they observed that there were

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[41] The single, bold, hand-drawn line at the bottom of that figure refers to a later-added substitution for the center radial line of each three-line group, resulting in the so-called "N" or "Z" pattern. See also, Exh. 306, a Hayes preliminary engineering drawing created in June, 1994 and showing the identical adhesive pattern that Defendants were intending to use in production.

[42] Beam was employed by McKechnie at the time of the this prototype activity, and joined Hayes in 1995.

gaps in the spread-out pattern of the adhesive. They further testified that Terry Eifert, the Ford engineer responsible for the F-150 wheel, also observed this assembly, but Mr. Eifert was not called as a witness.

The three Hayes witnesses testified that they never tried to obtain full adhesive coverage and never achieved it. Coverage was estimated to be about 75%. They gave plausible reasons why full coverage would be both impractical and undesirable. First, it would have been necessary for the robot-guided adhesive application nozzle to make numerous passes over each wheel so that there would be closely-spaced adhesive beads or strips that would merge together to fill the entire void when the cladding was pressed onto the wheel face. Such a process would be time-consuming and expensive, requiring additional robots to meet required production rates. Second, to assure full coverage, excess costly adhesive would be required, inevitably causing adhesive to be squeezed out at the inner and outer cladding perimeters and around each window opening, and therefore requiring labor to wipe away the exposed adhesive with solvent.[43] Chase, patentee of the '213 Patent, agreed that full coverage would be very costly and time-consuming, and that the selective application pattern was one of the benefits of the claimed invention. The '213 Patent itself cites the economic advantages of selective application, as quoted above.

For additional documentary corroboration of the adhesive coverage of Defendants' pre-critical date prototypes, Defendants rely upon July 7, 1993 minutes

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[43] Beam at 680; Heck at 741-43 and 747-48; Maloney at 67-68.

of a McKechnie meeting concerning a McKechnie (then Thompson International) project involving chrome-plated overlays for steel and aluminum wheels. Brief mention is made of crevices filling with poultice, and the need for evaluation of "open areas" between the overlay and base wheel (Exh. 567). The document contains no identification of the affiliation of author J. Coyle, no connection between the project being discussed and the unmentioned Hayes' F-150 prototype wheels, and no description of the adhesive application pattern or quantity. There was no trial testimony concerning this document. Although the document corroborates ongoing activity in the field of adhesively secured cladding, it is too general and incomplete to be entitled to any weight as corroboration of use of the *claimed* invention.

To similar effect is Hayes' reliance on an August 3, 1994 Hayes memorandum excerpt concerning discussions of various unspecified glue patterns during the preceding December (Exh. 139, ¶3c). Reference to cycle times, without any description of a particular pattern or adhesive volume, is insufficient to corroborate the witnesses' testimony concerning the adhesive coverage issue here in dispute.

Finally, Defendants rely upon the previously discussed December 16, 1993 Hayes memorandum that described the prototype wheel that was returned following Ford's durability testing, where the cladding fell off when Hayes cut the wheel into sections (Exh. 677, ¶3). Specifically, Defendants rely on the reference to the "glue pattern" that was observed after the cladding fell off, arguing that there would have been no "pattern" unless there were contrasting portions where adhesive was and was not present. While use of

"pattern" might in some contexts lend support to Defendants' position, the Special Master finds that this particular use is at best ambiguous:

> "Inspection indicated that the glue was mainly not adhering to the chrome skin. Thompson to prevent the backside of the skin from being chromed in hopes the glue will 'stick' better. Also, the glue *pattern* indicated there was 'pullback' from the skin 'rebounding' away from wheel after the initial press."[44]

The Special Master finds that "pattern" in the quoted context more likely refers to *which* of the two opposed faces retained the glue afier separation, rather than *how much* of the area was covered with glue when the parts were first pressed together.

Lacks counters with the assertion that the only contemporaneous documents contradict Defendants' position that the pre-critical date adhesive coverage was inadequate to fill the gap and left voids, as required by the '213 Patent claims. Hayes witness Beam, while a McKechnie employee, filed a patent application on September 3, 1993, just a few months after the assembly of the F-150 wheel prototypes for Ford upon which Defendants rely for their on-sale/public use defense. The resulting '370 Patent (previously discussed) discloses and claims a composite wheel wherein the cladding is applied by a combination of adhesive and a mechanical locking means at the wheel rim. The patent states that adhesive 42 is of "substantially uniform thickness" and

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[44] Exh. 677, ¶3 (emphasis added).

that the wheel assembly uses a "*full surface* adhesive 42 fixation technique."[45] Furthermore, Figure 5 of the patent drawings shows a full-radius cross-section of the assembly with no gaps in the adhesive layer.

The second contemporaneous document relied upon by Lacks is the '631 Patent, filed February 24, 1994 (still prior to the June 6, 1994 critical date) by the other two Hayes witnesses, Maloney and Heck. Heck testified that his invention disclosure was made in August, 1993, shortly after the F-150 wheel prototypes in question were delivered to Ford for testing. It is the pre-assembly adhesive pattern of Figure 2 of this patent that Heck and Beam testified was used for the Ford prototypes. The patent specification states that the adhesive pattern "is selected so that when the wheel cover 16 is positioned on the disc 14 and pressure applied thereto, a smearing of the adhesive 70 *over substantially the entire outboard face of the disc occurs.*"[46] Continuing, the patent states that the adhesive *"covers substantially the entire interface* between the cover 16 and the disc 14 . . . to provide a seal and prevent water, mud, and other debris from entering" the gap.[47] As in the case of the '370 Patent drawings, the sectional drawings of the '631 Patent show no gaps in the adhesive. Defendants, relying on dictionary definitions, argue that the use of "substantially" to describe the adhesive coverage after assembly does not mean that 100% coverage was contemplated, else "entirely" or "completely" would

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[45] Exh. 2, Col. 5, lines 33-34 and col. 7, line 11 (emphasis added).

[46] Exh. 39, col. 3, lines 64-68 (emphasis added).

[47] *Id.* at col. 4, lines 1-5 (emphasis added).

have been used. In the absence of some further discussion of an objective to reduce cost or weight, or to create voids, the Special Master finds that word choice too slim a reed to establish corroboration for Defendants' position, particularly in view of the widespread use of "substantially" by patent drafters as a "weasel" word modifier to cover both an absolute and a slightly-less-than-absolute condition. Further, these patent documents are of limited evidentiary value as the to extent of adhesive coverage *actually used or offered for sale*, because methods and structures often evolve from those disclosed in patents.

Defendants' contentions that it would have been unnecessarily costly or time consuming to provide full adhesive coverage, or that there is no evidence that the pre-critical date coverage was full rather than partial with voids, may be true, but such considerations are not a substitute for *clear and convincing* proof that the pre-critical date F-150 prototype wheels did in fact have voids in the gap between the wheel and overlay, as Defendants' were obliged to establish.

On the last day of trial, both parties offered testimony and calculations of the gap and adhesive volumes to support their position on this issue. The calculations were based upon estimates and speculations as to the volume of adhesive used (in cubic inches), the area under the cladding (in square inches) and the gap between the wheel surface and the rear of the cladding (in inches). Both sides used an April 13, 1994 Hayes memo containing an unexplained estimate of 3.5 cubic inches of adhesive. There is no evidence as to the actual volume used for the pre-critical date prototypes that were built.

For the potential area of coverage, Chase calculated 119 square inches from the F-150 drawing (Exh. 42), while Heck used 194 square inches based upon a CAD system-based calculation. For the gap, Chase used .030 inches because that was the optimal adhesive thickness according to Lord. However, Hayes Exh. 529 of 1/27/94, which Chase says he referred to, says Lord prefers .020 inches. Chase also acknowledged that the gap varies on the physical parts. Because this gap varies (as shown on Hayes sketch of 1/20/94, Exh. 528), Chase assumed a .030 inch gap for his calculation, to give Defendants the benefit of the doubt. Heck made gap measurements of .050 inches and .250 inches on an F-150 production wheel in the courtroom (Exh. 402), but used the .030 inch gap used by Chase in the latter's calculations.

As was inevitable with these differing premises, the parties' calculations yielded substantially different results. The Special Master finds none of these calculation-based conclusions concerning the extent of adhesive coverage to be persuasive. They are based upon too many uncertainties, assumptions and approximations.

Lacks contends that Defendants' assembly process did not employ a reduced adhesive volume until August 31, 1994, more than two months after the critical date. On that date, a Drafting Room Order directed, "change adhesive pattern as shown," (Exh. 307, 308) changing the between-window pattern on the drawing (Exh. 308) from three 6 mm-diameter beads to two 12 mm-diameter beads, while retaining the inner and outer peripheral beads at 6 mm-diameter. The pattern was again changed on September 12, 1994 (Exh. 310-311) to the final production pattern of three

radial beads in the N-shaped pattern, with the radial and the peripheral beads all having a reduced diameter of 5 mm.

Lacks submitted an Appendix A to its Post-Trial Brief, presenting a new set of calculations concerning the theoretical adhesive volume. Defendants responded with a Motion to Strike New Evidence, or, in the alternative, for Leave to File a Reply Brief that was attached, and Lacks filed a Memorandum in Opposition. In Appendix A, Lacks calculated the percentage reduction in adhesive volume called for by a September 15, 1994 Hayes drawing as compared with the adhesive volume called for by an August 31, 1994 Hayes drawing. In both cases, the relative volumes were computed using the well- known formula for the volume of a cylinder (i.e., $\pi r^2 L$), the adhesive strips or beads being circular in cross-section as they exit the robot-guided dispensing nozzle. According to Lacks' post-trial calculations, the pattern and dimensional changes from August 31st to September 12th resulted in a reduction in adhesive volume in the radial beads of about 74% and in the peripheral beads of about 31%. From this calculation, and Chase's estimate that the trial exhibit production F-150 wheels (Exh. 402-405) have an adhesive coverage of about 50%, Lacks concludes that the calculated reduction in adhesive "is consistent with a change from a substantially full-surface application of the adhesive to one in which the adhesive coverage was only 50 percent" (Br. at p. 26).

Defendants' Motion to Strike Appendix A charged that it was an improper attempt to introduce new evidence, particularly because the conclusion quoted immediately above was a theory that was not

introduced at trial, never subjected to scrutiny by *voir dire* or cross-examination, and therefore not countered by any rebuttal evidence from Defendants. Lacks' response denies that the calculations were new evidence, likening the use of a well-known and unchallenged mathematical formula for volume of a cylinder to the use of simple arithmetic in a closing argument or post-trial brief to add together damage claim elements that were in evidence. The Special Master agrees with Lack's position on the Appendix A calculations themselves, but considers the quoted conclusion from Lacks' Post-Trial Brief, based upon those calculations, to be in the nature of a newly added and speculative conclusion. Rather than strike Lacks' Appendix A and disregard Lacks' proffered conclusion based thereon, the Special Master denies Defendants' Motion to Strike, but grants their alternative request that their Reply Brief directed to the substance of Appendix A and Lacks' discussion thereof be received.

A first challenge to the Appendix A calculations is that there is an erroneous premise. There was credible testimony, not rebutted, that the August 31, 1994 change from thee radial strips of 6 mm diameter to two radial strips of 12 mm diameter (Exh. 307, 308) was never actually incorporated in any assembled wheels because the adhesive application equipment could not dispense beads of two different diameters during production. That is, it could not dispense a 6 mm-diameter bead for the peripheral strips and a 12 mm-diameter bead for the radial strips. It was for that reason that a second pattern change was made on September 12, 1994 (Exh. 310-311), wherein all beads were reduced to 5 mm diameter and the N-shaped pattern of three continuous strips replaced the three interrupted, generally parallel, radial strips so that

they could be applied more rapidly in one continuous pass of the robot-guided nozzle.

Therefore, the reduction in adhesive volume generated by the change from the pre-critical date, uniformly 6 mm-diameter strips, to the post-critical date, uniformly 5 mm diameter-strips, was approximately 31% for both the peripheral portions of the pattern and the radial portions between the wheel windows or vent openings. That is a far less dramatic reduction than the 31% and 74% reductions, respectively, contended by Lacks based upon the Appendix A calculations.

Furthermore, the Special Master finds that the whole premise, that there is a correlation between these changes in adhesive volumes and the ultimate factual issue of whether the pre-critical date prototypes met the claim limitation concerning adhesive gaps that created "voids," to be speculative and unpersuasive to support Lacks' asserted conclusion. In fact, as asserted by Defendants' Reply Brief concerning Appendix A, working backwards from Lacks' premise that the production wheels (with 5 mm-diameter beads) produce about 50% adhesive coverage after the adhesive beads are flattened and spread during assembly, the earlier-used (pre-critical date) pattern of 6 mm-diameter beads would have produced a pattern of about 72%. That is, restoring the 31% volume reduction would increase the 50% adhesive coverage in the production wheels by a factor of 1/.69 or 1.45, resulting in about 72% coverage. If anything, if the methodology employed in Lacks' argument is entitled to any weight, with the corrected premise explained above, that methodology could also be used to support Defendants' position that at all times, both

before and after the critical date, the adhesive coverage was substantially less than 100%, thereby conforming to the relevant claim limitation.

In summary, the Special Master finds that the evidence concerning the bead diameter used to make the pre-critical date prototypes is too incomplete and uncertain to support Lacks' calculations about before-and-after adhesive volumes and its resulting speculative conclusions concerning pre-critical date adhesive coverage.

Similarly, Defendants' proofs concerning the extent of adhesive coverage on its pre-critical date composite wheels are too incomplete, speculative, uncorroborated and contradictory to fulfill their burden to establish correlation with the *claimed invention* by clear and convincing standard evidence. The relevant documents do not serve to persuasively corroborate the testimony of Defendants' own witnesses, because the documents themselves are also too incomplete or contradictory to meet that standard.

3. The Character of the Pre-Critical Date Activities

Turning from the *subject matter* of the alleged on-sale and public use activities to the issue of their *commercial nature*, the well-documented record of Defendants' development efforts and contacts with General Motors and Ford concerning adhesively-secured wheel overlays is not challenged by Lacks. Rather, Lacks' challenge seems to be confined to the contention that Hayes' pre-critical date shipment of prototype wheels to Ford for durability testing was a permissible *experimental use*, and therefore not a

patent-invalidating offer for sale or public use of the claimed invention.

Because of the absence of challenge by Lacks, the customer contacts by Defendants can be briefly summarized. As early as the Spring of 1992, McKechnie (actually, its predecessor, Thompson International) had used a two-part epoxy to secure a chrome-plated stainless steel overlay to an aluminum wheel manufactured by Enkei, and shown such a prototype assembly to General Motors, Ford and Chrysler. It was McKechnie's hope that it could purchase production wheels from a wheel manufacturer and assemble the overlays of its own manufacture to the wheels and then sell the composite wheel to the OEMs as a tier one supplier. However, its primary goal was to sell overlays, so McKechnie also showed its prototype assemblies to Hayes in that same time period. By March of 1993, McKechnie-Hayes cooperation had advanced to the point that an adhesive had been selected after consultation with Lord, McKechnie was planning to test the adhesively-secured prototypes for corrosion, heat shock and heat history, a McKechnie-Hayes-Lord-Ford meeting was scheduled to determine testing requirements, plans for adhesive-dispensing equipment and robots were being discussed, and 50 prototype F-150 wheel assemblies would be prepared and supplied to Ford by June 15, 1993 for testing at its Arizona Proving Grounds. The June 6, 1994 critical date was still one year in the future.

In April, 1993, McKechnie quoted Ford a $32.78 price for chrome-plated cladded steel wheels for the 1995 F-150 and Bronco wheels, indicating a savings of $16.22 relative to a chrome-plated steel wheel. An

October 19, 1993 Hayes memo indicated that some Ford personnel were proponents of this new product, but that "to get this thing sold at Ford," a particular Ford supervisor's approval was required. McKechnie's plans to build 100 F-150 prototypes by December 1, 1993 for testing were discussed, including durability testing and cold weather/hot weather brake vehicle testing by Kelsey-Hayes Garage over the winter "to determine the strengths and limitations of the product."

A November 10, 1993 Hayes memo of a meeting with McKechnie, Ford and a robot supplier focused on production equipment costs and lead time concerns to meet the 1995 model year schedule. The memo recalls that Hayes' earlier cost reductions had taken business away from competitor Motor Wheel, and notes that delay of this new and even greater cost reduction opportunity would "give Motor Wheel (or others) a chance to beat us to the punch and 'steal' business away from Hayes Wheel International." Ford requested a "song and dance" meeting for the following week, "with written test results, FMEAS, schedules, etc.," and "if all looks good, a verbal OK to tool may be given." As Heck testified, "we were hoping to come out of this meeting with a purchase order." On December 1, 1993, Hayes' senior account manager wrote a letter to a Ford engineer thanking him for his help on the program, and stating that the author "look [sic] forward to receiving the kick-off." By early 1994, Hayes issued several purchase orders for the necessary tooling and equipment. It did so, although it had not yet received a written purchase order from Ford, because it could not otherwise have made the beginning of the 1995 F-150 model year, and, as Heck testified, "we had been verbally given the impression,

a high degree of confidence this was going to go forward unless there was some major issue.". In fact, the model year began in August, 1994, and Hayes did not begin shipping production, commercially produced, wheels, until December, 1994.

Summarizing Defendants' Ford-related sales promotional program, the record is essentially confined to Defendants' own testimony and documentation. Nevertheless, the documentation was abundant and Lacks has not challenged the dates and events. Subject only to the lack of clear and convincing evidence on the critical issue of the extent of the adhesive coverage, and further subject to Lacks' contention that the activities were in the nature of an experimental use (discussed below), the Special Master is persuaded from the record that Defendants had *some kind* of adhesively bonded, chrome-cladded F-150 wheel assembly on sale to, and in public use by, Ford prior to the June 6, 1994 critical date.[48]

Lacks asserts that the above-described pre-critical date activity between Defendants and Ford was not a patent-invalidating public use or on-sale because it was conducted for the sole purpose of having Ford conduct vehicle testing to validate Defendants' F-150 prototype wheels. Lacks further contends that Defendants did not deliver the prototypes to Ford for

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[48] Additional sales promotional efforts were made by McKechnie during 1993, including contacts, demonstrations and price quotes to Motor Wheel, Chrysler and General Motors. The Special Master finds the record on these activities to be no more clear and convincing as to a patent-invalidating on-sale or public use than the Ford sales efforts described above, and therefore there is no need to recount it in detail.

the purpose of trade or profit, and had not yet formed an intent to commercialize their cladded wheels. Thus, according to Lacks, the wheels were sent to Ford for primarily experimental, rather than commercial, purposes.

Viewing the record against the criteria for invoking the experimental use exception (*Paragon* and *LaBounty*, *supra*), Lacks cannot prevail on its characterization of Defendants' extensive activities with Ford. Not only is there abundant contemporaneous documentation recording the commercially-motivated basis for these activities (some of which is quoted above), but there is an absence of the kind of documentary evidence that would be expected to accompany a legally-permissible experimental use. Defendants did not specify the nature of Ford's testing, and they did not supervise, control or even observe Ford's testing. Ford was under no obligation to report the specific test results back to Defendants, and did not issue any test documentation to Defendants. The communication back from Ford was limited to returning two wheels that failed corrosion testing, and a conclusory report that the wheels had passed powertrain durability testing. Mr. Heck of Hayes described the purpose of the Ford tests:

> Q. Were you required by Ford to conduct durability tests?
>
> A. We were required to pass the durability tests that Ford performs.
>
> Q. They were going to run the durability testing and your wheels had to pass their durability tests?

A. That's correct.[49]

On this record, it is apparent that the Ford testing was a *customer's* test, to see if the product met Ford's requirements. Any feedback to Defendants concerning the test results was primarily a pass/fail conclusion, and only incidentally of value to the wheel's designers. The Special Master finds that the activities were primarily commercial, rather than experimental, in character, and that the Defendants retained insufficient control over Ford's testing to negate the public use character of Ford's use of the prototype wheels made by Defendants' pre-critical date assembly method.

4. **The Section 102(b)/103 Defense**

Alternatively, Defendants invoke the "obviousness" provisions of 35 U.S.C. §103 In combination with the on-sale and public use provisions of Section 102(b). They assert that the Remaining Claims are invalid as obvious in view of a combination of the disclosures of certain Lacks prior art foreign patents and the on-sale and public use activities of Defendants.[50]

The assertion of this defense can be quickly disposed of, as it is improper for two reasons. Most fundamentally, the Final Pre-Trial Order, which governed the trial of this suit, does not include among the "Issues of Fact and/or Law to be Litigated" any reference to a Section 103 or obviousness defense. The

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[49] Heck at 142.

[50] See Section I-A, *supra*, as to the Lacks foreign patents.

relevant provision is explicitly limited: "Are the asserted Claims 11-13, 20-22, 24 and 25 of Plaintiffs '213 Patent invalid *under 35 U.S.C. §102(b),* because [of Plaintiffs and Defendants' pre-critical date public use and/or on-sale activities]." Also, Defendants' two pages of Post-Trial Brief arguments concerning obviousness are mere attorney argument, unsupported by any trial record on the prescribed factual inquiries that are the necessary predicate for a conclusion concerning the obviousness of the claimed invention. See, *Graham v. John Deere,* 383 U.S. 1, 17 (1966). The only trial reference to the two foreign patents is that they showed the original concept of "a cladding that was permanently attached to the wheel."[51]

Defendants had previously raised an obviousness defense in a motion for partial summary judgment. Judge Feikens denied that motion because of the absence of an adequate factual record:

> "The final validity question is whether the prior art already discussed – the foreign patents, the Tully patent, the Spiegel patent, and defendants' Beam patent – would have made the remaining claims of the '213 patent obvious to one of ordinary skill in the art of cladded wheels. Even though it is clear that none of these prior art references alone would have made the remaining claims obvious, defendants fail to address in even the briefest manner the motivations that might have led a person of ordinary skill in the art to realize the desirability of combining the teachings of some

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[51] Chase at 36.

> or all of the prior art. The issue of motivation must be resolved in every obviousness determination involving combinations [case citation omitted]. Without any argument or evidence from defendants on motivation, I cannot engage in an obviousness analysis."[52]

So here. There is no record, and the Pre-Trial Order precludes Defendants from reviving this defense following completion of the trial.

C. Lacks' Alleged On-Sale

The starting point for this analysis is Judge Feikens' earlier Opinion dealing with seven partial summary judgment motions, one of which sought a finding of an invalidating on-sale based upon Lacks' own commercialization efforts. *Lacks Industries, Inc. v. McKechnie Vehicle Components USA, Inc. et al*, 55 F. Supp. 2d 702 (E.D. Mich. 1999). Following the holding of *Pfaff*, Judge Feikens found that the second prong of *Pfaff* was satisfied with respect to the inventions of claims 1, 8, 11 and 25:

> ". . . were ready to be patented as of May 1992. At that time, Chase had conceived of a cladded wheel that 1) had a temporary securing means in the form of a mechanical fastener (the key element of claims 1 and 8) and/or 2) used a selective application of the permanently

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[52] Opinion, July 1, 1999.

> securing adhesive (the key element of claims 11 and 25)."

55 F. Supp. 2d at 734.

The trial record reinforces that finding. For example, a Lacks drawing dated May 26, 1992 shows a wheel with a selective adhesive pattern comprising an outer peripheral bead and beads around each vent area. Chase admitted that one skilled in the art could practice the invention from that drawing.[53] Indeed, Lacks acknowledges that "there is no issue as to whether Lacks had the claimed invention ready to patent before the critical date."[54] That acknowledgement makes no distinction among the Remaining Claims, and therefore is accepted as applying to all.

A possible alternative basis for satisfying the second prong under the *Pfaff* test would be a finding that the claimed invention was actually reduced to practice before the critical date. Because of issues that arose in the post-trial proceedings, it is useful to define relevant patent law terms:

> "Conception is the formation, in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is thereafter to be applied in practice. . . . A reduction to practice can be either a constructive reduction to practice, which occurs

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[53] Exh. 65; Chase at 568-73.

[54] Post-Trial Brief, p. 33.

> when a patent application is filed, or an actual reduction to practice. . . . In order to establish an actual reduction to practice, the inventor must prove that: (1) he constructed an embodiment or performed a process that met all the limitations of the [patent claim]; and (2) he determined that the invention would work for its intended purpose."

Cooper v. Goldfarb, 154 F.3d 1321, 1327 (Fed. Cir. 1998) (citations omitted).

Here, an issue arose as to the probative value of Lacks' answers to interrogatories seeking the dates when the invention of each of the '213 Patent claims was conceived and reduced to practice. Lacks' initial answer provided the single date of "at least as early as March 1993." During a later deposition of the patentee Chase, his patent counsel stated that the reduction to practice date would be amended to May 26, 1992. Chase testified that he understood "reduced to practice" to mean the invention was in a drawing or articulated, but not necessarily embodied in a prototype or mock-up.[55] Thus, as modified by his deposition testimony, the May 26, 1992 date appears to refer to what is essentially only a *conception* date rather than an actual reduction to practice date. That testimony is consistent with the trial record as a whole, which does not support a conclusion that an actual reduction to practice of the claimed invention occurred that early.

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[55] Chase's deposition testimony was introduced at pages 568-70 of the trial record.

But for that testimony, it might have been appropriate to assume that the original interrogatory answer date of March 1993, signed by Lacks' patent attorney, referred to the dates of both conception and actual reduction to practice, according to the definitions of those terms as normally employed in the field of patent law. The Chase deposition testimony, however, casts doubt on the meaning and reliability of that earlier interrogatory answer as well. The Special Master is therefore unwilling to credit it as an admission as to the date of actual reduction to practice. The same can be said for other post-trial pleadings of Lacks now relied upon by Defendants. These statements, concerning the pre-critical date existence of mock-ups and prototypes (without evidence of contemporaneous testing establishing usefulness for the intended purpose), do not warrant the conclusion that Lacks was also admitting the existence of an actual reduction to practice, according to the normally accepted legal definition of that term.

The Special Master finds that the record as a whole does not warrant a conclusion that the method of the Remaining Claims had been actually reduced to practice (*i.e.*, performed and proven useful for its intended purpose) prior to the June 6, 1994 critical date. Nevertheless, the second prong of the *Pfaff* test was satisfied here, as explained above, because the claimed invention was ready for patenting before the critical date.

Turning next to the other *Pfaff* prong, the commercial offer of sale, Judge Feikens found that Lacks had shown mock-up cladded wheels to potential customers (i.e., both wheel manufacturers and OEMs) during a period beginning March 1992 and continuing

into 1993, and that at least some of those mock-ups probably selectively applied adhesive in the manner taught by claims 11 and/or 25. 55 F. Supp. 2d at 734-35. However, the Court found that a reasonable jury could conclude that these customer contacts were motivated by Lacks' desire to receive customer input and validation of the ongoing cladded wheel development. Citing *Intel Corp. v. U.S. Int'l Trade Comm'n,* 946 F.2d 821, 828 (Fed. Cir. 1991), the Court found that Lacks' release of the cladded wheels to its sales and marketing staff on January 5, 1994 did not itself constitute a commercial offer of sale, particularly in the absence of any evidence of subsequent offers to sell prior to the June 6, 1994 critical date. Accordingly, Judge Feikens denied the partial summary judgment motion respecting claims 1, 8, 11 and 25. 55 F. Supp. 2d at 735.

Thus, the present inquiry concerning the alleged on-sale activities of Lacks focuses on the issue of whether Defendants have proven, by clear and convincing evidence, that Lacks made a "commercial offer of sale," after the May 26, 1992 ready-for-patenting date and before the June 6, 1994 critical date, thereby satisfying the first prong of *Pfaff*.

1. <u>Meaning of "Commercial Offer of Sale"</u>

The Supreme Court in *Pfaff* stated that the first condition for establishing a patent-invalidating on-sale under Section 102(b) is "that the product must be the subject of a *commercial* offer for sale." 525 U.S. at 67 (emphasis added). While the Special Master finds no ambiguity or departure from precedent in the Court's use of "commercial" in that context, *obiter dictum* in a subsequent decision of the Federal Circuit suggests a

contrary interpretation, one that invokes contract law principles. The nature of Lacks' pre-critical date contacts with potential customers requires that the Special Master choose between these two possible interpretations of "commercial" before determining whether Lacks' pre-critical date activities created a Section 102(b) bar to patentability. To aid in construing the Supreme Court's meaning and intention in choosing "commercial" as a qualifier for "offer for sale," it is helpful to briefly review pre-*Pfaff* precedents.

In *RCA Corp. v. Data Gen. Corp.*, 887 F. 2d 1056 (Fed.Cir. 1989), the Court explicitly ruled that contract law principles do not govern Section 102(b) issues:

> "The requirement of a *definite* offer excludes merely indefinite or nebulous discussion about a possible sale. While this requirement may be met by a patentee's commercial activity which does not rise to the level of a formal 'offer' under contract law principles [citation omitted], a definite offer in the contract sense clearly meets this requirement."

887 F. 2d at 1062 (italicized emphasis in original; underlined emphasis added).

There is nothing in *Pfaff* that suggests that the Supreme Court intended to modify the law with respect to the meaning of the "offer for sale," or first prong, of its two-prong requirements for an invalidating on-sale. In fact, all indications are to the contrary. In the following discussion, italics have been added to "commercial" each time it appears in a *Pfaff* quote. The Special Master believes that the context in

which it was used by the Court confirms that the Court was intending only to contrast a *commercial* activity involving the claimed invention with an *experimental* transaction. Under settled law, unchanged by *Pfaff,* the former may cause forfeiture of patent rights, while activity primarily experimental in character and directed to the claimed invention presents no such penalty if conducted prior to an actual reduction to practice or readiness for patenting.

Initially, it is revealing that the Supreme Court granted *certiorari* in *Pfaff* "to determine whether the *commercial marketing* of a newly invented product may mark the beginning of the 1-year period even though the invention has not yet been reduced to practice." 525 U.S. at 57. No question involving the elements necessary to prove the offer itself was presented. Nor was there even a factual issue as to whether an offer had occurred. Briefly, the salient facts were that, before March 17, 1981, Pfaff showed a sketch of his concept to representatives of Texas Instruments. On April 8th, the latter provided Pfaff with a written confirmation of an earlier oral purchase order. The critical date was April 19, 1981, and an actual reduction to practice did not occur until the summer of 1981. The dispositive language of *Pfaff* follows (with emphasis added):

> "We conclude, therefore, that the on-sale bar applies when two conditions are satisfied before the critical date. First, the product must be the subject of a *commercial* offer for sale. An inventor can both understand and control the first *commercial marketing* of his invention. The experimental use doctrine, for example, has not generated concerns about indefiniteness, and

> we perceive no reason why unmanageable uncertainty should attend a rule that measures the application of the on-sale bar of Section 102(b) against the date when an invention that is ready for patenting is first *marketed commercially*. In this case the acceptance of the purchase order prior to April 8, 1981 makes it clear that *such an offer* had been made, and there is no question the sale was *commercial rather than experimental in character."*

Id. at 67.

It is long-settled law that even a completed sale will not start the one-year period running if the motivation and *"character"* of the sale are primarily experimental rather than commercial. "The law has long recognized the distinction between inventions put to experimental use and products sold *commercially." Pfaff, supra*, at 64. "Commercial" and "experimental" commonly appear as pivotal terms in cases assessing the Section 102(b) implications of sales activity. It was therefore unremarkable that the Supreme Court used that term as it did, for it was merely re-affirming *that* prong to be one part of the traditional two-part test for an on-sale. To interpret the Court's use of *"commercial* offer" to mean "an offer in accordance with contract law principles" would be to eviscerate the Court's expressed contrast between commercial and experimental sales, and require that an offer satisfying contract law principles would invalidate a patent even if made for purely experimental purposes. The Court made no such suggestion or ruling. Indeed, it reaffirmed the distinction, as quoted at the beginning of this paragraph.

Finally, the Supreme Court quoted with approval Judge Learned Hand's succinct summary of the on-sale bar:

> "It is a condition upon an inventor's right to a patent that he shall not exploit his discovery competitively after it is ready for patenting; he must content himself with either secrecy, or legal monopoly."

Id. at 68, quoting *Metallizing Eng'g Co. v. Kenyon Bearing & Auto Parts Co.*, 153 F.2d 516, 520 (2d Cir. 1946).

In contrast, and properly so, the Supreme Court devoted substantial portions of its *Pfaff* opinion to the precedents and policies relating to the second prong, as that was the prong that it modified so dramatically. That prong had previously gone through several evolutionary steps, including a long-standing requirement for an actual reduction to practice, and, from the 1987 *UMC* decision by the Federal Circuit until *Pfaff*, the "totality of the circumstances" test that required only a substantial (rather than complete) physical embodiment of the claimed invention.

A post-*Pfaff* decision of the Federal Circuit, however, ascribes a markedly different meaning and consequence to the Supreme Court's choice of "commercial-offer-for-sale" terminology. In *Rotec Indus. v. Mitsubishi Corp.*, 215 F.3d 1246 (Fed. Cir. 2000), the Federal Circuit addressed the issue of whether there was an infringing "offer to sell" under Section 271(a) of the statute, where there had been no act of infringement in the United States, and all the negotiations, bid proposals, contract signing and

manufacture had taken place abroad. The Court applied a dramatically new interpretation of *Pfaff's* "commercial offer for sale" language, taken from *Pfaff's* Section 102(b) context, to the dissimilar *infringement* context of Section 271(a), and concluded that both "on sale" in the former section and "offer for sale" in the latter section should be interpreted under traditional contract law. Because *Rotec's* comments about "on sale" and Section 102(b) are *obiter dictum*, the Special Master does not consider them binding on the Section 102(b) analysis required here. Nevertheless, it is appropriate to present the relevant excerpts from the *Rotec* decision.

In *Rotec*, the Court noted the absence of Congressional guidance for interpreting the 1996 amendment of Section 271(a) that added "offer to sell" to the long-familiar "make, use or sell" acts of infringement. The Court quoted from its 1998 (post-*Pfaff*) decision in *3D Systems, Inc. v. Aarotech Labs, Inc.*, 160 F.3d 1373, 1379, n.4 (Fed. Cir. 1998):

> "We decline to import the authority construing the 'on sale' bar of Section 102(b) into the 'offer to sell' provision of Section 271(a)."

215 F.3d at 1252.

But then the Court appears to have merged the interpretations of those two statutory sections into one, notwithstanding its explicit recognition of the differing policy consideration applicable thereto, and without comment as to the body of prior interpretation of Section 102 that it appeared to discard:

"[T]he analysis of an 'offer to sell' under Section 271(a) is consistent with the Court's [i.e., the Supreme Court's] analysis in *Pfaff* of Section 102(b).[3]

> [3] Of course the jurisprudence surrounding the on-sale bar of Section 102(b) is premised on different policy reasons. As we noted in *3D Sys.*:
>
> > [t]he policy reasons underlying the on-sale prohibition of Section 102(b) include the concern that patentees will commercialize their inventions while deferring the beginning of the statutory patent term, encouraging prompt and widespread disclosure of inventions to the public, discouraging the removal of inventions from the public domain when the public has come to rely on their ready availability, and giving investors a reasonable period to discern the potential value of an invention. *Id. at 1379, n. 4. In* contrast, the policy underlying the 'offer to sell' liability under Section 271(a) includes 'preventing a competitor from generating interests in a potential infringing product to the commercial detriment of the rightful patentee.' *Id.*

In *Pfaff*, the Supreme Court noted that *norms of traditional contract law should be the basis for the on-sale determinations under Section 102(b).* The Court specifically held that for the Section 102(b) on-sale bar to apply, 'the product must be the subject of a commercial offer for sale.' *Id.* at

> 67. This analysis is not divergent from our Section 271(a) analysis, because an offer for sale, whether made before or after a patent is applied for, or after it is granted, requires no more than a commercial offer for sale. *Both sections invoke the traditional contractual analysis.* Therefore, we similarly define Section 271(a)'s 'offer for sale' liability according to the norms of traditional contractual analysis."

Id. at 1252-53 (emphasis added).

* * * *

> As a result, we conclude that the meaning of 'offer to sell' is to be interpreted according to its ordinary meaning in contract law, as revealed by traditional sources of authority."

Id. at 1253.

As previously noted, the Court's comments about Section 102(b) were *obiter dictum* to the Section 271(a) issue before it, and the Special Master therefore considers them not controlling here. Furthermore, for the reasons presented above in the discussion of the meaning of "commercial" as employed in *Pfaff*, the Special Master respectfully disagrees with *Rotec's* interpretation that "on sale" under Section 102(b) is to be construed under contract law.

A post-*Rotec* decision of the Federal Circuit reinforces the conclusion that *Pfaff's* use of "commercial" in the context of an on-sale inquiry was part of the determination of the commercial-versus-experimental character of the transaction, rather than an application of contract law principles. In *Monon*

Corporation et al v. Stoughton Trailers, 239 F.3d 1253 (Fed. Cir. 2001), the patent owner and customer made a pre-critical date written sales contract regarding the later-patented van trailer. The contract included the selling price and other conventional terms. There was thus no question that a contract existed in accordance with contract law principles. The trailer was built just prior to the critical date and delivered to the customer shortly after that date. The following excerpts from the Court's opinion, each with emphasis added, leave no doubt that the Court's use of "commercial" was part of its evaluation of the *character* of this unquestionably complete contract:

> "Because we find that the patentee raised a genuine issue of material fact as to whether its ***sale*** of a tractor truck trailer prior to the critical date of its patent was ***primarily experimental, and thus was not a 'commercial sale'*** for the purposes of 35 U.S.C. § 102(b), we reverse the trial court's grant of summary judgment [of invalidity] and remand for further proceedings on validity and infringement consistent with this opinion."

Id. at 1254.

> "Thus, Continental's payment of $18,18,640 to Monon for the sample trailer must be considered in ***determining whether the sale and use were commercial as opposed to primarily experimental.***"

Id. at 1260.

> "However, the ***characterization of this sale*** is very much in dispute. In particular, ***the district court's opinion does not suggest how the contract can properly be construed as a 'commercial sale,"*** when Monon agreed to reimburse continental for the use of the trailer after the one year trial period."

Id. at 1261.

> "In light of the above testimony, we conclude that Monon has raised a genuine issue of material fact as to ***whether its December 19, 1983 contract with Continental reflected a 'commercial offer for sale.'*** *Pfaff*, 525 U.S. at 67, 119 S.Ct. at 311. Because Monon has raised a genuine issue of material fact as to the first prong of the *Pfaff* test, we need not also examine whether Monon's trailer was 'ready for patenting,' under the second prong of *Pfaff*."

Ibid.

Based upon the foregoing authorities and analysis, the Special Master applies the *RCA* holding, quoted above, that a definite offer, for purposes of Section 102(a), "may be met by a patentee's commercial activity which does not rise to the level of a formal 'offer' under contract law principles."

2. **Lack's Pre-Critical Date Activities**

It should be remembered that the asserted patent claims are *method* claims, each comprising a series of steps for assembling an overlay to a wheel. The issue, therefore, is whether Lacks made a definite offer, as

contrasted with "merely indefinite or nebulous discussion about a possible sale" (*RCA*, *supra*), to perform the steps of the method for primarily commercial purposes. Did Lacks "exploit [the] discovery competitively" or "attempt to use it for profit" before the June 6, 1994 critical date? *Pfaff*, *supra*, at 68, 65.

Lacks is not a wheel manufacturer. Presently, Lacks is both a tier one and tier two supplier. As a tier one supplier, it purchases wheels from the wheel manufacturer, assembles the overlay to it and ships the composite wheel to the OEM. As a tier two supplier, Lacks does not purchase the wheel but the wheel travels the same path, with Lacks performing the assembly steps for the wheel manufacturer. Therefore, a potential Lacks customer might be either the tier one wheel manufacturer or the OEM. In both cases, Lacks would manufacture the overlays and perform the assembly steps of the claimed method. Therefore, an offer after the ready-for-patenting date of May, 1992, and before the June 6, 1994 critical date, to form an overlay for any wheel, and to assemble it to the wheel with an adhesive, in accordance with the steps of the Remaining Claims, and primarily for commercial purposes, would be an on-sale under Section 102(b).

The record abundantly establishes a thorough and extensive campaign by Lacks to exploit competitively, to use for profit and to commercialize the ready-for-patenting method, commencing two years before the June 6, 1994 critical date. After the May, 1992 ready-for-patenting date, Lacks made pre-critical date commercialization efforts with both wheel manufacturers and OEMs. Lacks widely promoted the

use of a specific composite wheel assembly technique, namely, the assembly technique of its later-granted method claims, to make wheels for *any and all* future vehicle models. Its sales solicitations took the form of demonstrations of physical samples of prototypes made in accordance with the asserted method claims, and repeated sales contacts with the same potential customers to highlight the advantages of the resulting products.

In a document entitled "Key Event Chronology *Chromtec*™ Wheel Development and Validation" (Exh. 58), the patentee Chase concisely summarized some of the milestones of Lacks' development. He prepared this chronology before this litigation, and confirmed at trial the accuracy of the dates. Quoted below in its entirety, it is noteworthy that all of the dates are before the June 6, 1994 critical date:

DATES	DESCRIPTION
March 1992	Developed fiberglass mock-up of concept.
June 1992	Confirmed market interest in concept.
July 1992	Developed FMEA & DVPR with customer involvement
August 1992	R & D funds approved.
October 1992	Completed screening of auto and aerospace adhesives.

DATES	DESCRIPTION
October 1992	Completed *CHROMTEC*™ design for existing Jimmy 4 x 4 wheel and kicked off tooling.
December 1992	First shots from development tool. Completed robotic assembly tooling.
January 1993	Assembled first bank of product. Began validation testing.
October 1993	Satisfactorily completed all testing.
January 1994	Released product to sales and marketing staff.

What is absent from this chronology is Lacks' extensive campaign throughout this period to demonstrate and promote the claimed invention to potential customers. Lacks' challenge to this on-sale defense is to the purpose of this campaign, not to the events or dates themselves. As would be expected, Lacks stresses other aspects of its pre-critical date activities, attempting to characterize them as motivated primarily by its desire to ascertain the extent of market interest and its need to determine the type of testing required by customers to validate the cladded wheel. It emphasizes the absence of clear and convincing proof of a definite, actual offer for sale of the cladded wheels embodying the claimed invention prior to the critical date. Therefore we turn to the activities.

The February, 1992 mock-up referenced in the chronology above comprised a standard Buick aluminum wheel to which a fiberglass mock-up of the cladding was secured by adhesive and screws. It was intended to exemplify the aesthetic appearance of the cladding concept. By April 24, 1992, Mr. Chase and various Lacks sales personnel had used the mock-up, along with other drawings, in meetings with Cadillac, Buick, General Motors, Chrysler and Ford to assess market interest in the concept. In each meeting, Chase took with him the Lacks salesperson or independent manufacturer's representative who was responsible for dealing with that OEM. According to his own written chronology, market interest was "confirmed" by June, 1992.

As previously noted, a drawing showing the selective application of adhesive was made on May 26, 1992. Experimentation on such patterns began by August, 1992.[56] By early 1993, Lacks had assembled claddings to GMC Jimmy cast aluminum wheels, using robot-applied adhesive. At least some of these prototypes had the adhesive pattern of claims 11 and 25. While laboratory and vehicle testing was being performed on these clad wheels, the Jimmy prototypes and other mock-ups were also being shown to OEMs and wheel suppliers. Lacks had several signed confidentiality agreements, including a May 5, 1992 agreement with General Motors Truck & Bus Division (referencing composite wheels "for the 1995 model S vehicles"); a July 8, 1992 agreement with Kelsey Hayes ("for future OEM automotive applications"); an October 19, 1992 agreement with Motor Wheel

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[56] Chase at 562.

Corporation; and a March 24, 1994 agreement with wheel manufacturer Accuride. The OEMs generally declined to sign such agreements, consistent with their usual policies.

By way of example, during the August 31, 1992 to June 2, 1994 period, there were at least fifteen meetings with Ford to discuss the Chromtec project. Mr. Czarnota, the independent sales rep responsible for Lacks' contacts with Ford, testified as follows:

> "Q. Now your goal in meeting with these people as described in Exhibit 74 and as you have described in your testimony, your ultimate goal was to sell them a Chromtech wheel; is that correct?
>
> A. Yes, sir. Absolutely.
>
> Q. And since you only got paid based on commissions, unless you sold them a wheel, you didn't get paid?
>
> A. Absolutely.
>
> Q. And all these meetings you're having here and the technology wheel update and these kind of things, are all part of what you do as a salesman in order to get a sale?
>
> A. Yes, sir."[57]

---

[57] Tr. 471.

During these pre-critical date meetings with potential-customers, Mr. Czarnota discussed the potential cost savings that would result from use of the cladded wheels.

The trial record includes an eleven-page "Chromtec™ Wheel Meeting Agenda, May 7, 1993" that outlines a Lacks presentation for a wheel manufacturer (and possibly OEMs as well) (Exh. 82). The document, although only a bullet-point abbreviated outline of a one-hour promotional presentation, discusses the adhesively-secured Chromtec wheels, including photographs of sample wheels, the statement that they "combine proven performance of HIPP-140 plated plastic technology with cast aluminum wheels and styled steel wheels," the statement that the process includes the step of "bond the skin to the wheel," a listing of the "potential benefits," a statement that the adhesive is the "primary attachment system," and a list of the proposed steps to "validate assemblies following a plan jointly developed with our customer." The Agenda also lists the reduced "premium" or cost penalty for achieving a chrome finish by using the Chromtec cladding technique as compared with directly plating a steel or aluminum wheel:

Cast Aluminum	$50.00 to $70.00
Styled Steel	$30.00 to $35.00
Chromtec Wheels	$15.00 to $20.00

While there is no evidence of a specific price being quoted, the quotation of approximate *cost savings* to potential customers was just as useful, for it permitted

direct comparison by the customer of the total price of a chrome-clad composite wheel made in accordance with the patented method with either a non-chromed wheel or a chrome-plated wheel made by previously available plating techniques.

In June, 1993, Lacks staged separate "Technology Updates" for "a couple of hundred" purchasing, engineering and sales personnel of Ford and Chrysler. The purpose was to show Lacks' promising new technologies to the OEMs. One station of the display was devoted to Chromtec cladded wheels, with physical samples, drawings and storyboards describing the features and advantages. Lacks' sales personnel were provided with printed material to brief them for anticipated questions, including the cost saving figures, similar to those shown above and the statement that "testing will be complete by mid-summer." All testing was "satisfactorily completed" by October, 1993, according to Chase's chronology.

Lacks' pre-critical date commercialization efforts with wheel manufacturer Accuride in March, 1994 are described in the record. A February 18, 1994 memo from Anita Riopelle, an independent manufacturer's representative for Lacks, describes a February 17th meeting at Accuride where the "main focus" related to Ford's urging Accuride to work with Lacks on Chromtec. A March 4, 1994 memo from Ms. Riopelle states that Accuride's top management, marketing and engineering had approved Chromtec "as the way to go to uplevel their wheels," and had requested a meeting to "lock down a design and establish a program." The memo recommended that "we should be prepared to do a full Chromtec presentation and have some design

concepts available." A joint Accuride-Lacks program was seen as a way for Accuride to increase their market share at Ford. Another Lacks manufacturer's representative, Mr. Czarnota, testified concerning this Accuride activity:

> Q. And Accuride had no cladded wheel technology. Part of what you had to sell to Accuride on the program was your cladded wheel technology, correct?
>
> A. Yes, sir. Yes, sir.
>
> Q. So you were not only trying to sell them cladding, but you had to sell them the technology that went with the cladding to attach the cladding to the wheel?
>
> A. That's what these meetings were about – to try to establish a relationship with Accuride and say it's in your best interests and in our best interests to develop a program with this cladding. It will increase your business.[58]

A March 21, 1994 letter from Mr. Chase to Lacks' patent counsel requested that a confidential disclosure agreement be prepared for a meeting with Accuride, indicating that "they will be our customer on CHROMTEC wheels." Several additional Accuride meetings were held in March, including a March 29, 1994 Chromtec presentation and discussion of shared costs for programs involving several wheel programs for Ford, GM and Chrysler. One of the listed action

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[58] Czarnota at 452-53.

items was "Accuride to quote Chrysler Chromtec proposal – timing is 2 weeks." When asked at trial whether "the whole purpose of this meeting was to sell solely the Chromtech wheel," Ms. Riopelle answered affirmatively. Similarly, Mr. Chase testified that Lacks was bringing to the table the cladding technology that it had developed, and that if Accuride was going to be a tier one supplier of a Chromtech cladded wheel, they would have to buy that technology and the cladding from Lacks. Regarding the quote to Chrysler, Chase testified that the purpose was to see if the price was sufficiently interesting to Chrysler to justify Lacks continuing with the technology.

By March, 1994, Lacks had produced about fifteen wheels with the selective adhesive pattern, and these were being used for validation and for demonstration to OEMs. By that time, twenty-two months had passed since the claimed invention was ready for patenting, and the critical date for Section 102(b) was still about three months in the future.

The Special Master finds that the activities summarized above were primarily motivated by Lacks' desire to commercialize its later-patented method of assembling overlays to wheels. Throughout the May, 1992 to June 6, 1994 period, Lacks (1) vigorously solicited wheel manufacturers to whom Lacks could sell overlays and on whose wheels Lacks could perform its overlay-bonding method, and (2) and vigorously solicited OEMs to specify and purchase wheels clad by the later-patented method. The documentary references to "development programs" involved programs to design and submit specific wheels to OEMs for their *customer* acceptance and validation testing. These programs were not the *inventor's*

programs of experimentation to perfect the patented *method* itself. Well before the critical date, Lacks' own test results were sufficiently conclusive that any remaining interest by Lacks in having potential customers perform tests was incidental and far subordinate to its dominant commercial motivation to persuade the customers to evaluate the resulting product and satisfy themselves that it was acceptable for their purchase and use.

Attempting to negate the significance of its extensive pre-critical date activities with potential customers, Lacks raises several arguments: the absence of a *definite* offer for sale; the customer contacts were to determine if there was sufficient market interest to justify development and to determine what testing was necessary to satisfy customers; Lacks continued to experiment with the adhesive pattern and to conduct durability tests after the critical date; and the absence of any disclosure of the adhesive pattern to potential customers.

Lacks is correct to the extent that there is no evidence of an offer to sell a particular cladded wheel for a specified vehicle at a specific price. But the *RCA* definition of a "definite offer" does not require that specificity:

> "The requirement of a definite offer excludes merely indefinite or nebulous discussion about a possible sale. While this requirement may be met by a patentee's commercial activity which does not rise to the level of a formal 'offer' under contract law principles [citation omitted], a

> definite offer in the contract sense clearly meets this requirement."

887 F. 2d at 1062.

In *RCA*, the Court held that "merely offering to sell a product by way of an advertisement or invoice may be evidence of a definite offer for sale or a sale of a claimed invention even though no details are disclosed." *Id.* at 1060 (emphasis in original). "That the offered product is in fact the claimed invention may be established by any relevant evidence, such as memoranda, drawings, correspondence, and testimony of witnesses." *Sonoscan Inc. v. Sonotec Inc.*, 936 F.2d 1261, 1263 (Fed. Cir. 1991) (quoting *RCA*).

Under these authorities, Lacks' commercial offers to perform its patented method were sufficiently "definite" to satisfy Section 102(b). Lacks' own contemporaneous documentation and trial testimony, summarized above, abundantly establish that (1) the assembly method that Lacks was offering to perform corresponded precisely with the invention of the Remaining Claims, and (2) the overlays and composite wheels that it was offering to sell in conjunction with a wheel-manufacturing partner were to be made by the claimed method. While no fixed price for a complete composite wheel was, or could be, quoted until a particular wheel design was specified by the OEM, Lacks did provide potential customers with narrow-ranged estimate of the "premium" or cost penalty for purchasing a wheel made in accordance with the patented method.

With regard to the purpose of Lacks' customer contacts, Lacks' own contemporaneous chronological

summary, reproduced above, stated that Lacks "confirmed market interest in concept" in June, 1992, and "developed FMEA and DVPR [listing of failure modes and testing standards] with customer involvement" in July, 1992. Thus, Lacks' extensive customer contacts after July, 1992 occurred *after* the claimed invention was ready for patenting, *after* Lacks had confirmed market interest and *after* Lacks had determined suitable testing standards. Paraphrasing *D.L. Auld v. Chroma Graphics*, 714 F.2d 1144, 1149 (Fed. Cir. 1983):

> "The claim is for a method, not a product. That the method would produce the product was known. Submission of [adhesively bonded clad wheels] for sale if the customer liked them was not experimentation on the method."

Experimental use ends with an actual reduction to practice, *RCA Corp.*, *supra*, 887 F.2d at 1061; *Pfaff, supra*, 525 U.S. at 66, fn. 12. However, the Special Master is not aware of any case holding that where, as here, satisfaction of the second prong of *Pfaff* is based upon a finding that the claimed invention was ready for patenting (rather than upon an actual reduction to practice), the patent owner is precluded from challenging the first prong of *Pfaff* by showing that its customer contacts were primarily motivated by *bona fide* experimental rather than commercial purposes. The *Monon* case, *supra*, at least implicitly supports that right. There was no pre-critical date actual reduction to practice in that case, and the Court held that a genuine issue of fact as whether the sale was primarily for experimental purposes made it unnecessary to reach the ready-for-patenting issue.

As previously explained, the Special Master finds that Lacks' primary motivation for its pre-critical date customer contacts was of a commercial rather than *bona fide* experimental character. Chase testified that the biggest problem in the development program was the failure that occurred in the September, 1993 Death Valley testing, when the high temperatures induced by the downhill braking tests caused blistering and distortion of the plastic cladding material. Significant to the issue of the need for further experimentation on the *claimed* invention, Chase testified that the September, 1993 test changed the direction of the development program "from being concerned about holding the cladding on to developing this higher heat plateable plastic."[59] But the Remaining Claims are silent as to the material of the overlay, and the experimental use exception does not apply to experimentation on nonclaimed features. *RCA Corp.*, *supra*.

Chase's own pre-litigation chronology document, reproduced above, states that Lacks had "satisfactorily completed all testing" by October, 1993. Lacks argues that such document could have been referring to full-face adhesive rather than the selective adhesive patterns of the Remaining Claims. But the Special Master finds that the record as a whole does not support that assertion. Lacks had been experimenting with selective adhesive patterns since August, 1992. The chronology document, necessarily written after its January, 1994 final entry, was written when Chase, by his own testimony, was no longer "concerned about holding the cladding on." Furthermore, on March 22,

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[59] Chase at 628.

1994, Chase stated in a letter to his patent attorney that the functions of the adhesive "can all be satisfied when as little as 25% of the cladding surface area is bonded." That letter also touted selective bonding as less costly and reducing weight. Lacks' own documents and testimony negate its attempt to bring its customer contact activity within the experimental use exception.

As to the absence of any disclosure of the adhesive pattern to potential customers, "the question is not whether the public knew of the invention, but whether the product sold or offered embodies the invention." *Ferag, supra*, 45 F.3d at 1568.

Thus, the Special Master finds that the first prong of *Pfaff*, the commercial offer for sale condition, has been established by clear and convincing evidence. As previously discussed, the second prong of *Pfaff*, the ready-for-patenting condition, was established by Judge Feikens' earlier ruling and by Lacks' concession.

CONCLUSIONS

For the reasons explained above, the Special Master finds as follows:

1. If claims 11-13, 20, 24 and 25 of the '213 Patent were valid, they would have been infringed by both Defendants.

2. If Claims 21-22 of the '213 Patent were valid, they would not have been infringed by either Defendant.

3. Claims 11-13, 20-22, 24 and 25 ("the Remaining Claims") of the '213 Patent are not invalid under 35

U.S.C. §102(b) as a result of any on-sale or public use by Defendants.

4. Claims 11-13, 20-22, 24 and 25 ("the Remaining Claims") of the '213 Patent are invalid under 35 U.S.C. § 102(b) as a result of on-sale activities by Lacks.

5. The Remaining Claims of the '213 Patent being invalid, judgment may be entered in favor of Defendants.

Dated: April 17, 2001

/s/ Richard D. Grauer
Richard D. Grauer
Special Master

APPENDIX G

NOTE: This order is nonprecedential.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

No. 2008-1167

[Filed December 18, 2008]

LACKS INDUSTRIES, INC.,

Plaintiff-Appellant,

v.

MCKECHNIE VEHICLE COMPONENTS USA, INC. (doing business as Thompson International),

Defendant-Appellee,

and

HAYES WHEEL INTERNATIONAL, INC.,

Defendant-Appellee.

Appeal from the United States District Court for the Eastern District of Michigan in case no. 96-CV-75692, Senior Judge John Feikens.

ORDER

Before Michel, Chief Judge, Clevenger, Circuit Judge, and Moore, Circuit Judge.

A petition for rehearing having been filed by the Appellees,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED.

The mandate of the court will issue on December 29, 2008.

FOR THE COURT,

/s/ Jan Horbaly/JB
Jan Horbaly
Clerk

Dated: 12/18/2008

cc: Steven L. Underwood
J. M. Huget, S. Glazek

LACKS INDUST V MCKECHNIE VEHICLE, 2008-1167
(DCT - 96-CV-75692)

APPENDIX H

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

No. 96-75692

[Filed February 15, 2000]

LACKS INDUSTRIES, INC., a Michigan corporation,

Plaintiff and Counter-Defendant,

-vs-

McKECHNIE VEHICLE COMPONENTS USA., INC., dba THOMPSON INTERNATIONAL, a Delaware corporation, et al.,

Defendants.

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STIPULATION AND ORDER REGARDING APPOINTMENT OF SPECIAL MASTER

Plaintiff, Lacks Industries, Inc., and Defendants, McKechnie Vehicle Components USA, Inc. and Hayes Lemmerz International, Inc. (fka Hayes Wheels

International, Inc.), pursuant to Rule 53 of the Fed. R. Civ. P., by and through their respective attorneys, hereby stipulate and agree as follows regarding the appointment of a Special Master in the above-captioned case:

A. That Richard D. Grauer is appointed as Special Master in this case;

B. That the Special Master make all factual findings and legal conclusions necessary to determine the following issues:

1. Whether Defendants' accused products literally infringe Claims 11-13, 20-22, 24 and 25 of Plaintiff's '213 patent; specifically, does the adhesive permanently secure the overlay to the wheel as required by the above claims?

2. If Defendants' accused products do not literally infringe Claims 11-13, 20-22, 24 or 25 of Plaintiff's '213 patent, do those products infringe any of these claims under the doctrine of equivalents?

3. Assuming that Defendants' accused products infringe one or more of the above claims, either literally or under the doctrine of equivalents, is the infringed claim invalid under 35 U.S.C. § 102(b), because (a) Plaintiff had the invention as claimed in the infringed claim on sale more than one year before Plaintiff applied for the '213 patent, or (b) because Defendants had the invention as claimed

in the infringed claim on sale or made public use of the invention as claimed in the infringed claim more than one year prior to Plaintiff's application for the '213 patent?

C. That pursuant to Rule 53(e)(1) of the Fed. R. Civ. P., the Special Master shall prepare a report containing findings of fact and conclusions of law.

D. That, pursuant to Rule 53(e)(4) of the Fed. R. Civ. P., the Special Master's findings of fact shall be final and that only conclusions of law will thereafter be considered by the Court;

E. That the Special Master has the authority to make all evidentiary rulings that arise in any proceeding relating to factual determinations relating to the above issues;

F. That the Special Master will determine question No. 3, even if he has determined that defendants have not infringed, either literally or under the doctrine equivalents, any of the above claims of the '213 patent;

G. That the parties will arrange to meet with the Special Master on or before February 22, 2000 to establish a schedule for the determination of the above questions; provided, however, that the schedule should be established so that the Special Master may render his determinations of the above questions on or before June 1, 2000;

H. That the Special Master will be compensated for his services at his normal hourly rate and that Plaintiff will bear one-half of the cost of the Special Master and the Defendants will bear the other one-half of such costs.

VAN OPHEM MEEHAN & VAN OPHEM, P.C.

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IT IS SO ORDERED:

JOHN FEIKENS
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